# SOLICITATION, OFFER AND AWARD

| 1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) | RATING | PAGE | OF PAGES |
|---|---|---|---|
| ➡ | DO-C9 | 1 | 46 |

| 2. CONTRACT NUMBER | 3. SOLICITATION NUMBER | 4. TYPE OF SOLICITATION | 5. DATE ISSUED | 6. REQUISITION/PURCHASE NO. |
|---|---|---|---|---|
| NAS5-00220 | RFP5-60390/203 | ☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP) | 3/17/00 | 904-60390-0008 |

| 7. ISSUED BY | CODE | 8. ADDRESS OFFER TO *(If other than Item 7)* |
|---|---|---|
| NASA/Goddard Space Flight Center<br>Greenbelt Road<br>Greenbelt, MD 20771 | 216 | |

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder"

## SOLICITATION

9. Sealed offers in original and copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in **Building 17, Room S-142** until **May 3, 2000** local time **2:00 p.m.**.

CAUTION — LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

| 10. FOR INFORMATION CALL: ➡ | A. NAME | B. TELEPHONE *(NO COLLECT CALLS)* | | | C. E-MAIL ADDRESS |
|---|---|---|---|---|---|
| | | AREA CODE | NUMBER | EXT. | |
| | Loren Kruger | 301 | 286 | 2028 | Lkruger@pop200.gsfc.nasa.gov |

11. TABLE OF CONTENTS

| (✓) | SEC. | DESCRIPTION | PAGE(S) | (✓) | SEC. | DESCRIPTION | PAGE(S) |
|---|---|---|---|---|---|---|---|
| | | PART I - THE SCHEDULE | | | | PART II - CONTRACT CLAUSES | |
| X | A | SOLICITATION/CONTRACT FORM | 1 | X | I | CONTRACT CLAUSES | 41-47 |
| X | B | SUPPLIES OR SERVICES AND PRICE/COST | 5-10 | | | PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH. | |
| X | C | DESCRIPTION/SPECS./WORK STATEMENT | 11-13 | X | J | LIST OF ATTACHMENTS | 48 |
| X | D | PACKAGING AND MARKING | 14 | | | PART IV - REPRESENTATIONS AND INSTRUCTIONS | |
| X | E | INSPECTION AND ACCEPTANCE | 15 | | K | REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS | 49-63 |
| X | F | DELIVERIES OR PERFORMANCE | 16 | | | | |
| X | G | CONTRACT ADMINISTRATION DATA | 17-29 | | L | INSTRS., CONDS., AND NOTICES TO OFFERORS | 64-80 |
| X | H | SPECIAL CONTRACT REQUIREMENTS | 30-40 | | M | EVALUATION FACTORS FOR AWARD | 81-87 |

## OFFER *(Must be fully completed by offeror)*

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days *(60 calendar days unless a different period is inserted by the offeror)* from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

| 13. DISCOUNT FOR PROMPT PAYMENT *(See Section I, Clause No. 52.232-8)* ➡ | 10 CALENDAR DAYS % | 20 CALENDAR DAYS % | 30 CALENDAR DAYS % | CALENDAR DAYS % |
|---|---|---|---|---|
| | | | | |

| 14. ACKNOWLEDGMENT OF AMENDMENTS *(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):* | AMENDMENT NO. | DATE | AMENDMENT NO. | DATE |
|---|---|---|---|---|
| | | | | |

| 15A. NAME AND ADDRESS OF OFFEROR | CODE | FACILITY | 16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)* |
|---|---|---|---|
| Science Systems and Applications, Inc<br>5900 Princess Garden Parkway, Suite 300<br>Lanham, Maryland 20706 | | | Anoop N. Mehta, CPA<br>Vice President and Chief Financial Officer |

| 15B. TELEPHONE NUMBER | | | ☐ 15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE. | 17. SIGNATURE | 18. OFFER DATE |
|---|---|---|---|---|---|
| AREA CODE | NUMBER | EXT. | | | |
| 301 | 731-9300 | 321 | | | December 1, 2000 |

## AWARD *(To be completed by Government)*

| 19. ACCEPTED AS TO ITEMS NUMBERED | 20. AMOUNT | 21. ACCOUNTING AND APPROPRIATION |
|---|---|---|
| | $204,588,542 | See page 2 |

| 22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: ☐ 10 U.S.C. 2304(c) ( ) ☐ 41 U.S.C. 253(c)( ) | 23. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)* See Clause G.11 ➡ | ITEM |
|---|---|---|

| 24. ADMINISTERED BY *(If other than Item 7)* | CODE | 25. PAYMENT WILL BE MADE BY | CODE |
|---|---|---|---|
| Loren M. Kruger | 216 | Cost and Commercial Accounts Department | 155 |

| 26. NAME OF CONTRACTING OFFICER *(Type or print)* | 27. UNITED STATES OF AMERICA | 28. AWARD DATE |
|---|---|---|
| *Leigh Anne Giraldii* | Leigh Anne Giraldi | 12/1/00 |

IMPORTANT -- Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

AUTHORIZED FOR LOCAL REPRODUCTION
33 (Rev. 9-97)
Previous edition is unusable
(48 CFR) 53.214(c)

STANDARD FORM
Prescribed by GSA - FAR

FILE COPY

NAS5-00220
Modification: BASIC (00)

B/NC: 203 PPC: KX

**OBLIGATE:**

| PCN | | JON | APPN | BLI | OC | AMT |
|---|---|---|---|---|---|---|
| 423-03048-000A | (1C) | 423-428-50-01-14 | 801/20110(01) | A501 | 2550 | $34,000 |
| 423-03049-000A | (1C) | 423-428-50-20-79 | 801/20110(01) | B501 | 2572 | $460,000 |
| 423-03050-000A | (1C) | 423-428-50-40-78 | 801/20110(01) | B401 | 2529 | $126,000 |
| 423-03060-000A | (1C) | 423-428-16-01-01 | 801/20110(01) | A501 | 2550 | $150,000 |
| 423-03060-000B | (1C) | 423-428-37-01-02 | 801/20110(01) | A501 | 2550 | $50,000 |
| 423-52986-000A | (1C) | 423-428-16-01-01 | 800/10110(00) | A501 | 2550 | $26,411 |
| 423-52986-000B | (1C) | 423-428-37-01-02 | 800/10110(00) | A501 | 2550 | $22,080 |
| 424-03271-000A | (1C) | 423-228-11-19-05 | 801/20110(01) | A501 | 2550 | $74,000 |
| 603-07726-000A | (1C) | 662-399-22-12-78 | 801/20110(01) | B401 | 2529 | $150,000 |
| 630-57729-000A | (1C) | 602-370-25-01-02 | 800/10110(00) | A200 | 2624 | $54,500 |
| 682-08652-004A | (1C) | 682-370-18-35-78 | 801/20110(01) | B401 | 2529 | $830,000 |
| 682-08652-004B | (1C) | 682-370-23-11-78 | 801/20110(01) | B401 | 2529 | $200,000 |
| 690-09117-000A | (1C) | 695-624-05-07-25 | 800/10110(00) | A501 | 2550 | $2,200 |
| 690-09129-000A | (1C) | 691-344-31-27-25 | 800/10110(00) | A501 | 2550 | $2,200 |
| 690-09129-000B | (1C) | 691-344-37-04-25 | 800/10110(00) | A501 | 2550 | $14,342 |
| 690-09129-000C | (1C) | 693-344-32-32-25 | 800/10110(00) | A501 | 2550 | $21,660 |
| 690-09129-000D | (1C) | 693-344-33-80-25 | 800/10110(00) | A501 | 2550 | $10,185 |
| 690-09129-000E | (1C) | 693-344-34-11-25 | 800/10110(00) | A501 | 2550 | $28,500 |
| 690-09129-000F | (1C) | 693-344-96-10-25 | 800/10110(00) | A501 | 2550 | $6,864 |
| 690-09129-000G | (1C) | 696-344-16-51-25 | 800/10110(00) | A501 | 2550 | $16,900 |
| 690-09129-000H | (1C) | 693-344-96-32-25 | 800/10110(00) | A501 | 2550 | $29,360 |
| 690-09129-000I | (1C) | 696-344-15-06-25 | 800/10110(00) | A501 | 2550 | $22,434 |
| 690-09129-000J | (1C) | 696-344-13-91-25 | 800/10110(00) | A501 | 2550 | $18,578 |
| 690-09130-000A | (1C) | 693-344-33-17-78 | 800/10110(00) | B401 | 2529 | $4,710 |

NAS5-00220
Modification: BASIC (00)

B/NC: 203 PPC: KX

**OBLIGATE:**

| PCN | | JON | APPN | BLI | OC | AMT |
|---|---|---|---|---|---|---|
| 690-09130-000B | (1C) | 693-344-39-04-78 | 800/10110(00) | B401 | 2529 | $32,700 |
| 690-09130-000C | (1C) | 695-344-13-91-78 | 800/10110(00) | B401 | 2529 | $10,483 |
| 690-09130-000D | (1C) | 695-344-32-01-78 | 800/10110(00) | B401 | 2529 | $6,208 |
| 690-09130-000E | (1C) | 695-344-33-52-78 | 800/10110(00) | B401 | 2529 | $1,272 |
| 690-09130-000F | (1C) | 696-344-14-04-78 | 800/10110(00) | B401 | 2529 | $2,212 |
| 690-09130-000G | (1C) | 693-624-06-82-78 | 800/10110(00) | B401 | 2529 | $24,534 |
| 690-09131-000A | (1C) | 693-624-06-83-25 | 800/10110(00) | A501 | 2550 | $1,000 |
| 690-09131-000C | (1C) | 695-370-20-02-25 | 800/10110(00) | A501 | 2550 | $2,511 |
| 690-09131-000D | (1C) | 693-624-06-66-25 | 800/10110(00) | A501 | 2550 | $5,000 |
| 690-09131-000E | (1C) | 695-626-30-11-25 | 800/10110(00) | A501 | 2550 | $7,656 |
| 690-09131-000F | (1C) | 693-624-05-01-25 | 800/10110(00) | A501 | 2550 | $2,000 |
| 690-09132-000A | (1C) | 692-624-06-85-78 | 800/10110(00) | A701 | 2529 | $4,000 |
| 690-09132-000B | (1C) | 695-624-03-02-78 | 800/10110(00) | A701 | 2529 | $2,824 |
| 690-09132-000C | (1C) | 695-624-05-07-78 | 800/10110(00) | A701 | 2529 | $748 |
| 690-09132-000D | (1C) | 695-624-05-08-78 | 800/10110(00) | A701 | 2529 | $2,668 |
| 690-09132-000E | (1C) | 695-370-17-33-78 | 800/10110(00) | A701 | 2529 | $2,334 |
| 690-09132-000F | (1C) | 695-624-06-88-78 | 800/10110(00) | A701 | 2529 | $2,555 |
| 690-09132-000G | (1C) | 695-370-17-33-78 | 800/10110(00) | A701 | 2529 | $1,000 |
| 690-09133-000A | (1C) | 690-329-10-20-25 | 801/20110(01) | A501 | 2550 | $15,000 |
| 690-09133-000B | (1C) | 694-329-10-20-25 | 801/20110(01) | A501 | 2550 | $100,000 |
| 690-09139-000A | (1C) | 696-370-10-02-25 | 800/10110(00) | A501 | 2550 | $27,398 |
| 690-09139-000B | (1C) | 696-370-17-32-25 | 800/10110(00) | A501 | 2550 | $94,657 |
| 900-60837-020A | (1C) | 900-622-33-11-03 | 800/10110(00) | A501 | 2590 | $9,556 |
| 902-10946-000A | (1C) | 902-428-50-16-78 | 801/20110(01) | B401 | 2529 | $380,000 |

NAS5-00220
Modification: BASIC (00)

B/NC: 203 PPC: KX

**OBLIGATE:**

| PCN | | JON | APPN | BLI | OC | AMT |
|---|---|---|---|---|---|---|
| 902-10946-000B | (1C) | 902-428-50-22-78 | 801/20110(01) | B401 | 2529 | $65,000 |
| 902-10953-000A | (1C) | 902-428-50-16-78 | 801/20110(01) | B401 | 2529 | $1,000,000 |
| 902-10953-000B | (1C) | 902-428-50-22-78 | 801/20110(01) | B401 | 2529 | $305,000 |
| 904-10794-001A | (1C) | 904-291-05-01-02 | 800/10110(00) | A507 | 2590 | $30,000 |
| 904-60820-015A | (1C) | 904-229-01-04-78 | 800/10110(00) | B423 | 2529 | $12,801 |
| 910-11170-001A | (1C) | 910-665-14-01-78 | 800/10110(00) | B409 | 2529 | $137,000 |
| 910-11170-003A | (1C) | 910-665-14-01-78 | 801/20110(01) | B401 | 2529 | $49,000 |
| 910-11171-002A | (1C) | 910-419-04-20-78 | 800/10110(00) | B408 | 2529 | $36,000 |
| 910-11309-000A | (1C) | 900-291-03-01-01 | 800/10110(00) | A501 | 2550 | $14,644 |
| 910-11309-000B | (1C) | 900-627-30-10-01 | 800/10110(00) | A501 | 2550 | $1,193 |
| 910-62002-014A | (1C) | 910-419-04-10-01 | 800/10110(00) | A505 | 2590 | $87,026 |
| 910-62002-015A | (1C) | 910-419-04-20-78 | 800/10110(00) | B406 | 2529 | $9,999 |
| 915-11751-000A | (1C) | 915-730-10-60-10 | 800/10110(00) | A701 | 2550 | $23,819 |
| 915-61483-000A | (1C) | 915-344-34-04-01 | 800/10110(00) | A501 | 2590 | $115,877 |
| 915-61781-000A | (1C) | 915-730-10-60-10 | 800/10110(00) | A701 | 2550 | $59,206 |
| 916-61482-000A | (1C) | 916-621-72-01-01 | 800/10110(00) | A501 | 2590 | $50,000 |
| 916-61987-000B | (1C) | 916-229-07-27-78 | 800/10110(00) | B408 | 2529 | $61,948 |
| 923-12586-000A | (1C) | 923-274-48-01-01 | 800/10110(00) | A501 | 2590 | $1,879 |
| 923-12586-001A | (1C) | 923-621-92-01-78 | 801/20110(01) | B401 | 2529 | $30,000 |
| 923-12586-002A | (1C) | 923-622-94-05-01 | 800/10110(00) | A501 | 2590 | $5,889 |
| 923-12586-002B | (1C) | 923-621-92-01-01 | 800/10110(00) | A501 | 2590 | $639 |
| 923-62674-000A | (1C) | 923-622-94-07-23 | 800/10110(00) | A501 | 2590 | $1,882 |
| 923-62674-000B | (1C) | 923-229-01-04-01 | 800/10110(00) | A501 | 2590 | $10,000 |
| 923-62674-000C | (1C) | 923-291-07-21-01 | 800/10110(00) | A501 | 2590 | $13,447 |

NAS5-00220
Modification: BASIC (00)

B/NC: 203 PPC: KX

**OBLIGATE:**

| PCN | | JON | APPN | BLI | OC | AMT |
|---|---|---|---|---|---|---|
| 930-63245-000A | (1C) | 933-370-20-03-78 | 800/10110(00) | B401 | 2529 | $22,640 |
| 930-63247-000A | (1C) | 930-751-10-10-78 | 800/10110(00) | B401 | 2529 | $4,200 |
| 930-63247-000B | (1C) | 930-625-20-61-78 | 800/10110(00) | B401 | 2529 | $10,348 |
| 930-63247-000C | (1C) | 930-627-20-01-78 | 800/10110(00) | B401 | 2529 | $10,295 |
| 932-62972-000A | (1C) | 932-622-07-04-78 | 800/10110(00) | B401 | 2529 | $2,800 |
| 932-62972-000B | (1C) | 932-627-30-10-78 | 800/10110(00) | B401 | 2529 | $7,100 |
| 932-62972-001A | (1C) | 932-624-05-05-78 | 800/10110(00) | B401 | 2529 | $100,000 |
| 934-63084-000A | (1C) | 934-625-20-12-78 | 800/10110(00) | B401 | 2529 | $35,000 |
| 934-63084-000B | (1C) | 934-625-20-31-78 | 800/10110(00) | B401 | 2529 | $15,000 |
| 934-63084-000C | (1C) | 934-625-20-61-78 | 800/10110(00) | B401 | 2529 | $18,988 |
| 971-13874-000A | (1C) | 971-622-82-12-78 | 800/10110(00) | B401 | 2529 | $6,587 |
| 971-13874-000B | (1C) | 971-622-83-36-78 | 800/10110(00) | B401 | 2529 | $32,929 |
| 974-64185-000A | (1C) | 974-627-30-10-78 | 800/10110(00) | B401 | 2529 | $14,299 |
| 974-64185-000B | (1C) | 974-291-01-67-78 | 800/10110(00) | B401 | 2529 | $5,000 |
| 974-64185-000C | (1C) | 974-291-01-91-78 | 800/10110(00) | B401 | 2529 | $13,033 |
| 975-14219-000A | (1C) | 975-622-96-01-78 | 800/10110(00) | B401 | 2529 | $48,000 |
| | | | | | | $5,561,708 |

**As a result of the above, the total funds obligated to this contract is $5,561,708 .**

INDEX OF CLAUSES FOR NAS5-00220

SECTION B – SUPPLIES OR SERVICES AND PRICE/COST



SECTION C – DESCRIPTION/SPECIFICATIONS/WORK STATEMENT



SECTION D – PACKAGING AND MARKING



SECTION E – INSPECTION AND ACCEPTANCE



SECTION F – DELIVERABLES OR PERFORMANCE



SECTION G – CONTRACT ADMINISTRATION DATA

INDEX OF CLAUSES FOR RFP5-60390/203

## SUPPLIES OR SERVICES AND PRICES/COST

### B.1 DELIVERABLE REQUIREMENTS (GSFC 52.211-90) (OCT 1988)

The contractor shall provide computer systems management, including the operating system and application of software; the development and use of scientific and engineering data analysis systems; and the engineering efforts that develop new technology for scientific instrumentation for Space and Earth Sciences and Technology research at NASA Goddard Space Flight Center. The overall mission is as described in Section J, Attachment A entitled, "Statement of Work," of this contract. The document entitled, "SOW Addendum", Section J, Attachment B of this contract describes the types of activities in this overall support. In addition, the following deliverables are required:

| ITEM | DESCRIPTION | REFERENCE | DUE DATE |
|---|---|---|---|
| 1. | Services in accordance with the SOW | J.1, Attachment A and Attachment B | As required in J.1, Attachments A & B |
| 2. | Notice of Estimated Cost Increased | B.2 | As required |
| 3. | Contractor's Self Evaluation | B.5 | As required |
| 4. | Baseline Cost Plans | C.3 and G.1 | Initially 30 days from contract award and, annually, thereafter |
| 5. | New and Modified Funding Procedures | C.4 | As generated |
| 6. | Financial Management Reports | G.1 and G.2 | As required |
| 7. | Financial Reporting of NASA Property in the Custody of Contractor's | G.3 | Annually (10/31) |
| 8. | Requests for Repair of Government Property | G.4 and G.7 | As required |
| 9. | Requisition and Invoice/Shipping Documents (DD Form 1149) | G.5 | As required |
| 10. | Reports of Reportable Items | G.10 | As required |

| | | | |
|---|---|---|---|
| 11. | Travel Reports | G.13 | 30 days after completion of travel |
| 12. | DOD Industrial Plan Equipment Requisition (DD Form 1419) | G.15 | As required |
| 13. | Onsite Personnel Reporting Requirements | H.1 | As required |
| 14. | Telephone Usage Certification | H.2 | Annually |
| 15. | Notification of Noncompliance with Safety Standards | H.6 | As required |
| 16. | Export Licenses | H.7 | As required |
| 17. | Procurement Library Deliverables | H.8 | As required |
| 18. | Identification of Onsite Focal Point | H.9 | At the start of the contract and as required |
| 19. | Request to Publish or Present Technical Papers | H.9 | As required |
| 20. | Personnel Security Questionnaire | H.10 | As required |

(End of Clause)

B.2 ESTIMATED COST INCREASES (GSFC 52.232-94) (SEP 1998)

(a) The requirements of this clause are in conjunction with the Limitation of Cost clause or the Limitation of Funds clause of this contract.

(b) The Contractor shall notify the Contracting Officer in writing when the Contractor has reason to believe that the total cost for performance of this contract, exclusive of any fee, will be either greater or substantially less than the total estimated cost stated in this contract. Notification shall not be delayed pending preparation of a proposal.

(c) A proposal is required to support a request for an increase in the estimated cost of the contract. The proposal should be submitted as soon as possible after the above notification but no later than 60 days before the incurred costs are expected to exceed the estimated cost. This will allow adequate time for the Government to evaluate the proposal and to mutually establish any increase in estimated cost with the Contractor.

(d)(1) The proposal shall ~~be~~ submitted in the following format unless some other format is directed or approved by the Contracting Officer:

Incurred costs to date
Projected cost to completion
Total cost at completion
Current negotiated estimated cost
Requested increase in estimated cost

(2) The projected cost to completion shall consist of the following: "Other than cost or pricing data" unless the Contracting Officer requests or approves the submittal of a greater or lesser amount of information:
(i) Elements of cost with supporting detail for estimated direct labor hours, direct and indirect rates, materials and subcontracts, and other elements.

(ii) Supporting explanation for the increases and projections, sufficient for the Government to understand the reasons for the increased estimated cost.

(End of clause)

B.3 ESTIMATED COST AND AWARD FEE (1852.216-85) (SEPTEMBER 1993)

The estimated cost of this contract is $189,433,836. The maximum available award fee is $15,154,706. The base fee is $0. Total estimated cost, base fee, and maximum award fee is $ 204,588,542.

(End of clause)

## SUPPLIES OR SERVICES AND PRICES/COST

### B.4 CONTRACT FUNDING (18-52.232-81) (JUN 1990)

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is $5,149,729. This allotment is for all services performed and covers the following estimated period of performance: The period of allotment for these funds is through January 15, 2000.

(b) An additional amount of $411,979 is obligated under this contract for payment of fee.

(End of clause)

### B.5 AWARD FEE FOR SERVICE CONTRACTS (1852.216-76)(JUNE 2000)

(a) The contractor can earn award fee from a minimum of zero dollars to the maximum stated in NASA FAR Supplement clause 1852.216-85, "Estimated Cost and Award Fee" in this contract.

(b) Beginning 6 months after the effective date of this contract, the Government shall evaluate the Contractor's performance every 6 months to determine the amount of award fee earned by the contractor during the period. The Contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's Fee Determination Official (FDO) will determine the award fee amounts based on the Contractor's performance in accordance with the Government's "Performance Evaluation Plan." The plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the Contractor in writing of the evaluation results. The Cost and Commercial Accounts Department, Code 155, will make payment based on issuance of a unilateral modification by contracting officer.

(d) After 85% of the potential award fee has been paid, the Contracting Officer may direct the withholding of further payment of award fee until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed 15 percent of the total potential award fee.

(e) The amount of award fee which can be awarded in each evaluation period is limited to the amounts set forth elsewhere in this contract. Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f)(1) Provisional award fee payments will be made under this contract pending the determination of the amount of fee earned for an evaluation period. If applicable, provisional award fee payments will be made to the Contractor on a monthly basis. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of 80% or

the prior period's evaluation score.
(2) Provisional award fee payments will be superseded by the final award fee evaluation for that period. If provisional payments exceed the final evaluation score, the Contractor will either credit the next payment voucher for the amount of such overpayment or refund the difference to the Government, as directed by the Contracting Officer.

(3) If the Contracting Officer determines that the Contractor will not achieve a level of performance commensurate with the provisional rate, payment of provisional award fee will be discontinued or reduced in such amounts as the Contracting Officer deems appropriate. The Contracting Officer will notify the Contractor in writing if it is determined that such discontinuance or reduction is appropriate. This determination is not subject to the Disputes clause.

(4) Provisional award fee payments will not be made prior to the first award fee determination by the Government.

(g) Award fee determinations are unilateral decisions made solely at the discretion of the Government.

(End of clause)

B.6 NONPROPOSED COSTS (GSFC 52.216-94) (FEB 1991)

(a) The total estimated cost of this contract includes the following estimated costs:

| CATEGORIES | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 | TOTAL |
|---|---|---|---|---|---|---|
| Local Travel | $13,799 | $14,200 | $14,626 | $15,064 | $15,516 | $73,206 |
| Non-Local Travel | $531,010 | $546,409 | $562,801 | $579,685 | $597,076 | $2,816,981 |
| Materials | $31,421 | $32,333 | $33,303 | $34,302 | $35,331 | $166,689 |
| "Other –ODC" | $355,597 | $365,910 | $376,886 | $388,194 | $399,839 | $1,886,427 |
| **TOTAL** | **$931,827** | **$958,852** | **$987,616** | **$1,017,245** | **$1,047,762** | **$4,943,302** |

(b) These costs are the Government's best estimate of what the actuals will be. There will be no adjustment in the fee(s) of the contract should the actuals be different than these estimates, unless additional effort is added to the contract or there is a change to the contract under the Changes clause of this contract which impacts these estimates.

(End of clause)

B.7 LIMITATION OF INDIRECT COSTS

a. Within each of the Contractor's fiscal years (1/1/xx – 12/31/xx), the Contractor shall not charge or be reimbursed by the Government, under this or any other Government contract, for indirect costs in excess of the individual indirect expense dollars derived by the application of the

following indirect cost ceiling rates to the appropriate base(s) set forth below.

| Indirect Cost | Base of Application | Portion of Fiscal Year | On-sIte Percentage (on-site labor) | Off-site Percentage (off-site labor) |
|---|---|---|---|---|
| Overhead | Labor | 1/1/00 –12/31/00 | | |
| | | 1/1/01 – 12/31/01 | | |
| Overhead | Labor | 1/1/01 –12/31/01 | | |
| | | 1/1/02 – 12/31/02 | | |
| Overhead | Labor | 1/1/02 –12/31/02 | | |
| | | 1/1/03 – 12/31/03 | | |
| Overhead | Labor _ | 1/1/03 –12/31/03 | | |
| | | 1/1/04 – 12/31/04 | | |
| Overhead | Labor | 1/1/04 –12/31/04 | | |
| | | 1/1/05 – 12/31/05 | | |

| Indirect Cost | Base of Application | Portion of Fiscal Year | Percentage |
|---|---|---|---|
| G&A | Total Cost (no fee) | 1/1/00 –12/31/00 | |
| | | 1/1/01 – 12/31/01 | |
| G&A | Total Cost (no fee) | 1/1/01 –12/31/01 | |
| | | 1/1/02 – 12/31/02 | |
| G&A | Total Cost (no fee) | 1/1/02 –12/31/02 | |
| | | 1/1/03 – 12/31/03 | |
| G&A | Total Cost (no fee) | 1/1/03 –12/31/03 | |
| | | 1/1/04 – 12/31/04 | |
| G&A | Total Cost (no fee) | 1/1/04 –12/31/04 | |
| | | 1/1/05 – 12/31/05 | |

b. The limitations may be adjusted at the discretion of the Contracting Officer to the extent that increases to the Contractor's indirect costs are caused by:

(i) New or revised statutes and court decisions and/or written ruling or regulation by the Internal Revenue Service or any other taxing authority.

(ii) Wage determinations and/or regulations issued by the Department of Labor pursuant to the Service Contract Act of 1965, as amended.

c. A proposal for any adjustment under paragraph (b) must be in sufficient detail to establish that the cause of the amount of adjustment requested was solely due to the permitted conditions stated in the paragraph. It must be submitted no later than 60 days after the condition(s) become

known, or should have become known, to the Contractor. The amount of adjustment, if any, is at the discretion of the Contracting Officer and shall not be subject to the Disputes clause.

(End of clause)

# DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

## C.1 SCOPE OF WORK (GSFC 52.211-91) (FEB 1991)

The Contractor shall provide the personnel, materials, and facilities, except as otherwise provided in the contract, necessary to perform the specialized support services as described in Section J, Attachment A, entitled " Statement of Work". At the start of the contract, the Contractor shall assume, as a minimum, the services described in Attachment B, entitled "SOW Addendum".

(End of clause)

## C.2 VARIATIONS IN SERVICE LEVELS

1. The total estimated cost and fee(s) of this contract are based upon the Contractor's estimate of the magnitude of effort required to provide the services described in Section J, Attachment A and addenda thereto (Attachment B, entitled "SOW Addendum"), for the term of the contract.

2. The Contractor will perform its duties in a dynamic environment in which the range of effort required to support GSFC's Space and Earth science activities will vary. Range of effort is comprised of all activities to be supported and resources to be used in the delivery of support.

(a) "Activities" include any organizations, laboratories, programs, projects, systems, and tasks funded during the course of the contract.

(b) "Resources" include all labor, skills, professions, facilities (except as otherwise provided in the contract), supplies and materials required to deliver high quality and timely support.

3. During the term of the contract, the Contractor shall deliver support in all functional areas identified in Attachment A, Statement of Work, across the full range of effort identified by the Contracting Officer or his/her technical representative, regardless of the magnitude of effort actually required. The Contractor understands and agrees to the following:

(a) Variation in the number or type of specific activities to be supported shall not constitute a change to the contract, and shall not entitle the Contractor to an equitable adjustment.

(b) Variation in the magnitude or mix of resources needed by the Contractor to deliver support shall not constitute a change to the contract, and shall not entitle the Contractor to an equitable adjustment.

4. Substantial expansion of the functional areas of responsibility, as established in Attachment A, Statement of Work, may constitute a change to the scope of the contract; however, the Contractor understands that the Attachment A, Statement of Work, is intended to be construed

broadly to achieve Earth and Space science objectives.

(End of text)

## C.3 TRACKING AND REPORTING REQUIREMENTS

Thirty days from the effective date of the contract, the Contractor shall deliver a baseline cost plan, by identification numbers designated in Attachment B, entitled "SOW Addendum", in accordance with the Financial Management Reporting requirements described in G.1, with the following conditions:

- Planned staffing for the first contract year, by identification number;
- Planned ODC's and indirects for the first contract year, by identification number;
- A total roll up of all identification numbers, by labor category, ODC's, indirects, etc. to be delivered to the Contracting Officer, the COTR, and the Contract Resource Manager from Code 903.
- Individual identification numbers, which will indicate the total estimated first year cost, are to be separately delivered to the technical representative and financial analyst for that funding source. The Government shall provide the distribution list at the start of the contract, and each subsequent contract year, for each of the Attachment B funding sources. As funding sources are added, the Government shall update the distribution list accordingly.

Financial Management Reporting requirements, throughout the period of performance, shall be at these same levels.

(End of Text)

## C.4 NEW AND MODIFIED FUNDING PROCEDURES

As described in C.1, Scope of Work, the Contractor shall assume, at the start of the contract, the services described in Attachment B, SOW Addendum. Variations to the range of services shall be handled as follows:

(a) New Funding Identification Procedures:

1. The Contractor may be approached to assist an activity(ies) not previously supported but within the scope of the contract.

2. The Contractor will generate a new 7-digit identification number using the following parameters:

- The first 2 digits represent the organization requiring support; e.g., Code 931 would be "93";

- The next 3 digits are a sequential numbering system, 001-999, applied to the particular organizations work to date (e.g., if this is the 21st separate funding source for Code 931, the identification number is extended to be "93-021.") The last digit is the Government's fiscal year. Thus, if the new funding source is identified in the first 12 months of the contract, and the contract is awarded October 1, 2000, using this example the final identification number would be: 93-021-01

3. The Contractor shall then prepare a general description of how it intends to support the work, generate a unique staffing plan for that work, along with the total estimated cost—from the planned start date through the remaining contract year, and provide that documentation to the appropriate Financial Analyst for the funding organization. The Government will, in turn, use its own internal process to ensure that funds are available to support that work. The Government process includes concurrence, not of the contractor's proposed support but, of the associated cost to ensure that sufficient funds are available to support the activity, from:

- The Assigned Technical Representative (ATR), who is the funding organization's technical representative;
- The Organization's Division or Lab Chief
- The Contracting Officer's Technical Representative (COTR)

4. The Contracting Officer shall notify the Contractor, either verbally or in writing, that work may proceed.

(b) Modified Identification Numbers:

1. Occasionally, an established funding source will need adjustment. Should this occur, the process is the same as described in paragraph (a) above, except the last two digits of the identification number will be modified to reflect this type of situation. For example, during performance of 93-021-01, we need to specifically cost and track a new UPN funding source for a particular piece of the work. An adjunct identification number shall be identified; i.e., 93-021-A1. The last digit maintains the fiscal year account, and the next to last digit indicates that it is the first adjunct number to the base funding source.

2. The Contractor shall prepare a general description of how it intends to support the modified work and the effect to the original workload identification number, if any, along with the modified staffing plan(s) and revised estimated cost(s). This documentation shall be delivered to the appropriate funding organization, and the same process and distribution as described in paragraph (a) above shall be followed.

(End of text)

SECTION D OF NAS5-00220

PACKAGING AND MARKING

D.1 PACKAGING, HANDLING, AND TRANSPORTATION (GSFC 52.211-92) (NOV 1999)

(a) The Contractor shall comply with NASA Procedures and Guidelines (NPG) 6000.1E, "Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components", dated April 26, 1999, as may be supplemented by the statement of work or specifications of this contract, for all software and hardware deliverable items except as may be indicated in paragraph (b) of this clause.

(b) The items listed in this paragraph are considered to be Class IV items and may be transported and handled through the use of normal commercial transportation. These items are excepted from the requirements of this clause: NONE

(c) The Packaging, Handling, and Transportation Record required for Class I items must be approved by the Center Transportation Officer and the Contracting Officer's Technical Representative. Refer to paragraph 3.3 of NPG 6000.1E.

(d) The Contractor's packaging, handling, and transportation procedures may be used, in whole or in part, subject to the written approval of the Contracting Officer and provided--

(1) The Contractor's procedures are not in conflict with any requirements of this contract; and

(2) The requirements of this contract shall take precedence in the event of any conflict with the Contractor's procedures.

(e) In addition to the prominent display of a NASA Critical Space Item label (NASA Form 1368) on all Class I, Class II, and Class III interior packages and exterior shipping containers, the Contractor shall, for space flight items, apply the following additional marking. The marking shall be blue in color:

"ITEMS FOR SPACE FLIGHT USE"

(f) The Contractor shall place the requirements of this clause in all subcontracts for items that will become components of deliverable Class I, II, or III items.

(End of clause)

SECTION E OF NAS5-00220

# INSPECTION AND ACCEPTANCE

## E.1 ACCEPTANCE--SINGLE LOCATION (GSFC 52.246-92) (SEPT 1989)

The Contracting Officer or authorized representative will accomplish acceptance at the NASA/Goddard Space Flight Center (GSFC) unless specified elsewhere in the Attachment B, SOW Addendum. For the purpose of this clause, the Contracting Officer's Technical Representative named in this contract is the authorized representative. The Contracting Officer reserves the right to unilaterally designate a different Government agent as the authorized representative. The Contractor will be notified by a written notice or by a copy of the delegation of authority if different representative is designated.

(End of clause)

## E.2 INSPECTION SYSTEM RECORDS (GSFC 52.246-102) (OCT 1988)

The Contractor shall maintain records evidencing inspections in accordance with the Inspection clause of this contract for three (3) years after delivery of all items and/or completion of all services called for by the contract.

(End of clause)

# DELIVERIES OR PERFORMANCE

## F.1 PLACE OF PERFORMANCE--SERVICES

The completion of most services specified by this contact shall be performed at the following location: Goddard Space Flight Center, Greenbelt, MD 20771. Space will be made available for no more than 400 Contractor provided personnel at this facility. As required, the Contractor may be required to perform services at various sites, such as locations identified throughout Section J, Attachment B, entitled, "SOW Addendum."

(End of clause)

## F.2 SHIPPING INSTRUCTIONS--CENTRAL RECEIVING (GSFC 52.247-94) (JUL 1993)

Shipments of the items required under this contract shall be to:

Receiving Officer
Building 16W
Code 239
Goddard Space Flight Center
Greenbelt, Maryland 20771

Marked for:

Technical Officer (Name) Code
Building Room
Contract No.
Item(s) No.

Compliance with this clause is necessary to assure verification of delivery and acceptance and prompt payment.

(End of clause)

## F.3 PERIOD OF PERFORMANCE

The period of performance under this contract shall be for a 5-year period from the effective date of contract.

(End of text)

# CONTRACT ADMINISTRATION DATA

## G.1 FINANCIAL MANAGEMENT REPORTING (GSFC 52.242-90)(FEB 2000)

(a) Requirements. This clause provides the supplemental instructions referred to in NASA FAR Supplement (NFS) clause 1852.242-73. The NFS clause and NASA Procedures and Guidelines (NPG) 9501.2C, "NASA Contractor Financial Management Reporting", establish report due dates and all other financial management reporting requirements. NPG 9501.2C permits withholding of payment for noncompliance.

(b) Supplemental instructions. (1) Monthly (NF 533M) reports are required. Quarterly (NF 533Q) reports are also required. For the total roll-up, one copy shall be provided to each of the following:

*Contracting Officer, Code 216
Contracting Officer's Technical Representative, Code 930
*Contract Financial Analyst, Code 903
Administrative Contracting Officer (if delegated)

*electronic version

In addition, individual identification numbers shall be separately distributed in accordance with the Government-Provided Distribution List described in Clause C.3 --Tracking and Reporting Requirements.

(2) The reporting structure shall be in accordance with the Clause C.3 -- Tracking and Reporting Requirements.

(c) Web sites. NPG 9501.2C, "NASA Contractor Financial Management Reporting":

http://nodis.hq.nasa.gov/Library/Directives/NASAWIDE/Procedures/Financial_Management/contents.html

In addition, individual identification numbers shall be separately distributed in accordance with the Government Provided Distribution List, to be provided after contract award.

(2) NF 533 Tutorial: (for training purposes only)

http://genesis.gsfc.nasa.gov/nf533.htm

(End of clause)

## CONTRACT ADMINISTRATION DATA

### G. 2 NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING (1852.242-73) (JUL 1997)

(a) The Contractor shall submit NASA Contractor Financial Management Reports on NASA Forms 533 in accordance with the instructions in NASA Policy Guidance (NPG) 9501.2, NASA Contractor Financial Management Reporting, and on the reverse side of the forms, as supplemented in the Schedule of this contract. The detailed reporting categories to be used, which shall correlate with technical and schedule reporting, shall be set forth in the Schedule. Contractor implementation of reporting requirements under this clause shall include NASA approval of the definitions of the content of each reporting category and give due regard to the Contractor's established financial management information system.

(b) Lower level detail used by the Contractor for its own management purposes to validate information provided to NASA shall be compatible with NASA requirements.

(c) Reports shall be submitted in the number of copies, at the time, and in the manner set forth in the Schedule or as designated in writing by the Contractor Officer. Upon completion and acceptance by NASA of all contract line items, the Contracting Officer may direct the Contractor to submit Form 533 reports on a quarterly basis only, report only when changes in actual cost incur, or suspend reporting altogether.

(d) The Contractor shall ensure that its Form 533 reports include accurate subcontractor cost data, in the proper reporting categories, for the reporting period.

(e) If during the performance of this contract NASA requires a change in the information or reporting requirements specified in the Schedule, or as provided for in paragraph (a) or (c) of this clause, the Contracting Officer shall effect that change in accordance with the Changes clause of this contract.

(End of clause)

### G.3 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (1852.245-73) (NOV 1999)

(a) The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with the provisions of 1845.505-14, the instructions on the form, subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA. Subcontractor use of NF 1018 is not required by this clause; however, the Contractor shall include data on property in the possession of subcontractors in the annual NF1018.

(b)(1) The Contractor shall mail the original signed NF 1018 directly to the Center Deputy Chief Financial Officer, Finance.

(2) Three copies shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address: GSFC.Supply and Property Team, Code 235, unless the Contractor uses the NASA NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(c) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 31. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 31. The Contracting Officer may, in the Government's interest, withhold payment until a reserve not exceeding $25,000 or 5 percent of the amount of the contract, whichever is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports when due. Such reserve shall be withheld until the Contracting Officer has determined that the required reports have been received by the Government.
The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

(d) A final report shall be submitted within 30 days after disposition of all property subject to reporting when the contract performance period is complete in accordance with (b)(1) and (2) of this clause.

(End of clause)

G.4 REPAIR OR REPLACEMENT OF GOVERNMENT PR0PERTY--SPECIAL CONDITIONS (GSFC 52.245-92) (SEP 1998)

(a) Government property categorized as facilities (defined at FAR 45.301 and NASA FAR Supplement 1845.301) has been provided for the performance of this contract.

(b) Except as specified in paragraph (e) below, the Government will not authorize the replacement of any defective Government property as a direct reimbursable cost under this contract. Replacement shall be at no cost to the Government except as may be permitted by FAR 31.20511, "Depreciation." However, the Government may authorize and reimburse the repair of defective Government property as stated in paragraph (c). If repair is not approved by the Contracting Officer, the Contractor agrees to replace any defective Government property with property owned or leased by the Contractor. However, such Contractor property need not be identical to the replaced property. Further, replacement may be waived by the Contracting Officer provided the Contractor submits a written request and demonstrates to the satisfaction of the Contracting Officer that the capability to perform the contract in an acceptable and efficient manner is not degraded.

(c) The Government may reimburse the reasonable direct cost for the repair of any Government property for which repair is determined to be an acceptable alternative. In accordance with FAR

clause 52.2455, the Contractor is required to have an approved maintenance/repair program for Government Property. The criteria in this program shall be used to determine when the contractor is required to request approval from the Contracting Officer for repair or replacement of Government property. However, in the absence of a Government approved maintenance/repair program, the Contractor must submit each repair request to the Contracting Officer. When the maintenance program requires the Contractor to inform the Contracting Officer of the need for a repair/replacement decision, the Contractor shall notify the Contracting Officer, in writing, and provide a "not to exceed" dollar amount for the repair of the property and a rationale as to why repair is the best alternative considering the age of the property, the nature of the defect(s), and the criticality of the property to the accomplishment of the requirements of the contract. If the Contracting Officer agrees that the property is still needed for contract performance and that repair is an acceptable alternative, the Contracting Officer may authorize the repair. If the Contracting Officer considers that repair is not an acceptable alternative, the Contracting Officer shall notify the Contractor and the replacement equipment or needed equivalent capability shall be provided by the Contractor in accordance with paragraph (b) above. This decision by the Contracting Officer shall not be subject to the Disputes clause of this contract.

(d) In the event that the Contractor is not selected in a subsequent recompetition of this requirement and the facility items replaced as contractor property are not needed for any other purpose, the Contractor is encouraged to offer to sell to the successor contractor any facility items that the successor contractor chooses to buy, at a fair and reasonable price.

(e) This clause shall not apply to the following items:

Section J, Attachment D, entitled "List of Contractor Access to Government Controlled Property."

(End of clause)

G.5 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (1852.245-71) (JUN 1998)

(a) The Government property described in the clause at 1852.245-77, List of Installation-Accountable Property and Services, shall be made available to the contractor on a no-charge basis for use in performance of this contract. This property shall be utilized only within the physical confines of the NASA installation that provided the property. Under this clause, the Government retains accountability for, and title to, the property, and the contractor assumes the following user responsibilities:

"An employee will not indirectly use or allow the use of Government property of any kind, including property leased to the Government, for other than officially approved activities. An employee has an affirmative duty to protect and conserve Government property, including

equipment, supplies, and other property entrusted to the employee. Additional responsibilities of the individual include:

(1) Notifying the cognizant property custodian, supervisor, and the Installation Security Officer immediately if theft of Government property is suspected;

(2) Ensuring that such equipment is used only in pursuit of approved NASA programs and projects;

(3) Identifying equipment not being actively used in pursuit of approved NASA programs and projects;

(4) Ensuring that equipment is turned in to the Property Disposal Officer through the cognizant property custodian when no longer needed. Under no circumstances will an employee throw away Government equipment.

(5) At Installation with full-time property custodians, assigned users retain all responsibilities including notifying cognizant property custodians of all activity associated with the user's assigned equipment."

The contractor shall establish and adhere to a system of written procedures for compliance with these user responsibilities. Such procedures must include holding employees liable, when appropriate, for loss, damage, or destruction of Government property.

(b)(1) The official accountable record keeping, physical inventory, financial control, and reporting of the property subject to this clause shall be retained by the Government and accomplished by the installation Supply and Equipment Management Officer (SEMO) and Financial Management Officer. If this contract provides for the contractor to acquire property, title to which will vest in the Government, the following additional procedures apply:

(i) The contractor's purchase order shall require the vendor to deliver the property to the installation central receiving area;
(ii) The contractor shall furnish a copy of each purchase order, prior to delivery by the vendor, to the installation central receiving area;
(iii) The contractor shall establish a record of the property as required by FAR 45.5 and 1845.5 and furnish to the Industrial Property Officer a DD Form 1149 Requisition and Invoice/Shipping Document (or installation equivalent) to transfer accountability to the Government within 5 working days after receipt of the property by the contractor. The contractor is accountable for all contractor-acquired property until the property is transferred to the Government's accountability.
(iv) Contractor use of Government property at an off-site location and off-site subcontractor use require advance approval of the contracting officer and notification of the SEMO. The contractor shall assume accountability and financial reporting responsibility for such property. The contractor shall establish records and property control procedures and maintain the property in

accordance with the requirements of FAR Part 45.5 until its return to the installation.

(2) After transfer of accountability to the Government, the contractor shall continue to maintain such internal records as are necessary to execute the user responsibilities identified in paragraph (a) and document the acquisition, billing, and disposition of the property. These records and supporting documentation shall be made available, upon request, to the SEMO and any other authorized representatives of the Contracting Officer.

(End of clause)

G.6 LIST OF INSTALLATION-ACCOUNTABLE PROPERTY AND SERVICES (1852.245-77) (JULY 1997)

In accordance with the clause at 1852.245-71, Installation-Accountable Government Property, the Contractor is authorized use of the types of property and services listed below, to the extent they are available, in the performance of this contract within the physical borders of the installation which may include buildings and space owned or directly leased by NASA in close proximity to the installation, if so designated by the Contracting Officer.

(a) Office space, work area space, and utilities. Government telephones are available for official purposes only; pay telephones are available for contractor employees for unofficial calls.

(b) General- and special-purpose equipment, including office furniture.

(1) Equipment to be made available is in Section J, Attachment D. The Government retains accountability for this property under the clause at 1852.245-71, Installation-Accountable Government Property, regardless of its authorized location.

(2) If the Contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records as required by the clause at 1852.245-71, Installation-Accountable Government Property.

(3) The Contractor shall not bring to the installation for use under this contract any property owned or leased by the Contractor, or other property that the Contractor is accountable for under any other Government contract, without the Contracting Officer's prior written approval.

(c) Supplies from stores stock.

(d) Publications and blank forms stocked by the installation.

(e) Safety and fire protection for Contractor personnel and facilities.

(f) Installation service facilities: Section J, Attachment D.

(g) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.

(h) Cafeteria privileges for Contractor employees during normal operating hours.

(i) Building maintenance for facilities occupied by Contractor personnel.

(j) Moving and hauling for office moves, movement of large equipment, and delivery of supplies. Moving services shall be provided on-site, as approved by the Contracting Officer.

(k) The user responsibilities of the Contractor are defined in paragraph (a) of the clause at 1852.245-71, Installation-Accountable Government Property.

(End of clause)

G.7 LIST OF GOVERNMENT-FURNISHED PROPERTY (1852.245-76) (OCT 1988)

For performance of work under this contract, the Government will make available Government property identified Attachment C of this contract on a no-charge-for-use basis. The Contractor shall use this property in the performance of this contract at Goddard Space Flight Center where property and at other location(s) as may be approved by the Contracting Officer. Under the FAR 52.245 Government property clause of this contract, the Contractor is accountable for the identified property.

(End of clause)

G.8 ACCESS TO GOVERNMENT CONTROLLED PROPERTY

In performance of services, the Contractor shall have access to Government Controlled Property, as generally described in Section J, Attachment D. The Contractor's responsibilities are referenced in Clause G.5 – Installation-Accountable Government Equipment.

(End of Text)

G.9 CONTRACTOR USE OF GSFC LIBRARY (GSFC 52.245-90) (AUG 1993)

The Contractor's professional employees performing work under this contract are granted borrowing privileges at the Goddard Space Flight Center (GSFC) Library.

(a) The Contractor shall establish procedures to account for borrowed materials and to ensure

their timely return. "Timely return" means prior to the expiration of the borrowing period, prior to the termination of employment of the particular employee, or prior to the expiration of this contract, whichever comes first.

(b) The Contractor shall initiate borrowing privileges for its employees by contacting the GSFC Librarian. The Librarian will require the Contractor to provide the name and title of the company official responsible for ensuring compliance with (a) above. The responsible official will be required to indicate the level of control for the issuance of Library charge plates and whether the countersignature of the responsible company official will be required on Goddard Library Card Applications. The GSFC Librarian may impose additional information requirements if Library privileges are requested for employees that do not have permanent GSFC badges.

(c) The Contractor shall be responsible for all items lost, destroyed or not returned. Such items shall be immediately replaced by the Contractor at no cost to the Government. The GSFC Librarian may revoke library privileges at any time during the performance of the contract if the Contractor fails to comply with this clause or is experiencing an inordinate amount of loss or destruction of library materials. Discontinuance of library privileges shall not entitle the Contractor to an increase in the cost or price for contract performance or to any other adjustment to the contract.

(End of clause)

G.10 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (1852.227-72) (JULY 1997)

(a) For purposes of administration of the clause of this contract entitled "New Technology" or "Patent Rights Retention by the Contractor (Short Form)", whichever is included, the following named representatives are hereby designated by the Contracting Officer to administer such clause:

| Title | Office Code | Address (including zip code) |
|---|---|---|
| New Technology | 750.1 | Goddard Space Flight Representative<br>Greenbelt, MD 20771 |
| Patent | 750.2 | Goddard Space Flight Representative<br>Greenbelt, MD 20771 |

(b) Reports of reportable items, and disclosure of subject inventions, interim reports, final reports, utilization reports, and other reports required by the clause, as well as any correspondence with respect to such matters, should be directed to the New Technology Representative unless transmitted in response to correspondence or request from the Patent

Representative. Inquiries or requests regarding disposition of rights, election of rights, or related matters should be directed to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a "New Technology" clause or "Patent Rights Retention by the Contractor (Short Form)" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the above named representatives are set forth in 1827.375370 of the NASA FAR Supplement.

(End of clause)

G.11 SUBMISSION OF VOUCHERS FOR PAYMENT (1852.216-87)(MAR98)

(a) The designated billing office for cost vouchers for purposes of the Prompt Payment clause of this contract is indicated below. Public vouchers for payment of costs shall include a reference to the number of this contract.

(b)(1) If the contractor is authorized to submit interim cost vouchers directly to the NASA paying office, the original voucher and one copy should be submitted to:

NASA/Goddard Space Flight Center
Cost and Commercial Accounts Department
Code 155/Bldg 18
Greenbelt, MD 20771

(2) For any period that the Defense Contract Audit Agency has authorized the Contractor to submit interim cost vouchers directly to the Government paying office, interim vouchers are not required to be sent to the Auditor, and are considered to be provisionally approved for payment subject to final audit.

(3) Copies of vouchers should be submitted as may be directed by the Contracting Officer.

(c) If the contractor is not authorized to submit interim cost vouchers directly to the paying office as described in paragraph (b), the contractor shall prepare and submit vouchers as follows:

(1) One original and one copy Standard Form (SF)1034, SF 1035, or equivalent Contractor's attachment to the Auditor:

Defense Contract Audit Agency
Columbia Branch Office
One Mall North, Suite 200
10025 Governor Warfield Parkway
Columbia, MD 21044
Phone: 410-964-2060
Fax: 410-997-3237

(2) (Reserved)

(3) The Contracting Officer may designate other recipients as required.

(d) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and be forwarded to the Contracting Officer. This is the designated billing office for fee vouchers for purposes of the Prompt Payment clause of this contract.

(e) In the event that amounts are withheld from payment in accordance with provisions of this contract, a separate voucher for the amount withheld will be required before payment for that amount may be made.

(End of clause)

G.12 COMMERCIAL COMPUTER SOFTWARE LICENSING (1852.227-86) (DEC 1987)

(a) Any delivered commercial computer software (including documentation thereof) developed at private expense and claimed as proprietary shall be subject to the restricted rights in paragraph (d) of this clause. Where the vendor/contractor proposes its standard commercial software license, those applicable portions thereof consistent with Federal laws, standard industry practices, the Federal Acquisition Regulations (FAR) and the NASA FAR Supplement, including the restricted rights in paragraph (d) of this clause, are incorporated into and made a part of this purchase order/contract.

(b) Although the vendor/contractor may not propose its standard commercial software license until after this purchase order/contract has been issued, or at or after the time the computer software is delivered, such license shall nevertheless be deemed incorporated into and made a part of this purchase order/contract under the same terms and conditions as in paragraph (a) of this clause. For purposes of receiving updates, correction notices, consultation, and similar activities on the computer software, the NASA Contracting Officer or the NASA Contracting Officer's Technical Representative/User may sign any agreement, license, or registration form or card and return it directly to the vendor/contractor; however, such signing shall not alter any of the terms and conditions of this clause

(c) The vendor's/contractor's acceptance is expressly limited to the terms and conditions of this purchase order/contract. If the specified computer software is shipped or delivered to NASA, it shall be understood that the vendor/contractor has unconditionally accepted the terms and conditions set forth in this clause, and that such terms and conditions (including the incorporated license) constitute the entire agreement between the parties concerning rights in the computer software.

(d) The following restricted rights shall apply:

(1) The commercial computer software may not be used, reproduced, or disclosed by the

Government except as provided below or otherwise expressly stated in the purchase order/contract.

(2) The commercial computer software may be (i) Used, or copied for use, in or with any computer owned or leased by, or on behalf of, the Government; provided, the software is not used, nor copied for use, in or with more than one computer simultaneously, unless otherwise permitted by the license incorporated under paragraphs (a) or (b) of this clause; (ii) Reproduced for safekeeping (archives) or backup purposes; (iii) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating restricted computer software shall be subject to the same restricted rights; and (iv) Disclosed and reproduced for use by Government contractors or their subcontractors in accordance with the restricted rights in subparagraphs (d)(2)(i), (ii), and (iii) of this clause; provided they have the Government's permission to use the computer software and have also agreed to protect the computer software from unauthorized use and disclosure.

(3) If the incorporated contractor's software license contains provisions or rights that are less restrictive than the restricted rights in subparagraph (d)(2) of this clause, then the less restrictive provisions or rights shall prevail.

(4) If the computer software is published, copyrighted computer software, it is licensed to the Government, without disclosure prohibitions, with the rights in subparagraphs (d)(2) and (3) of this clause.

(5) The computer software may be marked with any appropriate proprietary notice that is consistent with the rights in subparagraphs (d)(2), (3), and (4) of this clause.

(End of clause)

## G.13 TRAVEL OUTSIDE OF THE UNITED STATES

The Contractor is responsible for all arrangements associated with employee travel while in performance of support under this contract.

The Contractor shall submit a travel report within 30 days after the conclusion of the travel required to support the activities listed in Attachment B, SOW Addendum, to the ATR.

(End of text)

## G.14 PROPERTY CLAUSE APPLICABILITY--ON-SITE AND OFF-SITE (GSFC 52.245-96) (SEP 1998)

(a) Performance of this contract requires that contractor personnel and any furnished and/or acquired government property be located at both Government controlled and managed premises (on-site) and at contractor controlled and managed premises (off-site). The requirements for

control and accountability of government property differ depending upon the location of the property. The applicability of the clauses in this contract to on-site and to off-site locations is indicated below.

(b) Clauses applicable to both on-site and off-site locations.

FAR clause 52.245-5, "Government Property (Cost Reimbursement, Time-and-Material, or Labor-Hour Contracts" except that para (e) does not apply to on-site locations.

NASA FAR Supplement clause 1852.245-70, "Contractor Requests for Government-Owned Equipment".

GSFC clause 52.245-92, "Repair or Replacement of Government Property--Special Conditions", if included.

GSFC clause 52.245-97, "Contractor Acquired Property--NASA Conditions".

(c) Clauses applicable only to off-site locations.

NASA FAR Supplement clause 1852.245-73, "Financial Reporting of NASA Property in the Custody of Contractors"

NASA FAR Supplement clause 1852.245-76, "List of Government-Furnished Property", if included.

(d) Clauses applicable only to on-site locations.

NASA FAR Supplement clause 1852.245-71, "Installation-Accountable Government Property (Alternate I)".

NASA FAR Supplement clause 18-52.245-77, "List of Installation- Accountable Property and Services".

GSFC clause 52.245-93, "Contractor Acquired Government Property"

(End of clause)

## G.15 1852.245-70 CONTRACTOR REQUESTS FOR GOVERNMENT-OWNED EQUIPMENT (1852.245-70) (JUL 1997)

(a) "Equipment," as used in this clause, means commercially available items capable of stand-alone use, including those to be acquired for incorporation into special test equipment or special

tooling.

(b)(1) Upon determination of need for any Government-owned equipment item for performance of this contract, the contractor shall provide to the contracting officer a written request justifying the need for the equipment and the reasons why contractor-owned property cannot be used, citing the applicable FAR or contract authority for use of Government-owned equipment. Equipment being acquired as a deliverable end item listed in the contract or as a component for incorporation into a deliverable end item listed in the contract is exempt from this requirement. (2) The contractor's request shall include a description of the item in sufficient detail to enable the Government to screen its inventories for available equipment or to purchase equipment. For this purpose, the contractor shall (i) prepare a separate DD Form 1419, DOD Industrial Plant Equipment Requisition, or equivalent format, for each item requested and (ii) forward it through the contracting officer to ~~the~~ Industrial Property Officer at the cognizant NASA installation at least 30 days in advance of the date the contractor intends to acquire the item. Multiple units of identical items may be requested on a single form. Instructions for preparing the DD Form 1419 are contained in NASA FAR Supplement 1845.7102. If a certificate of nonavailability is not received within that period, the contractor may proceed to acquire the item, subject to having obtained contracting officer consent, if required, and having complied with any other applicable provisions of this contract.

(c) Contractors who are authorized to conduct their own screening using the NASA Equipment Management System (NEMS) and other Government sources of excess property shall provide the evidence of screening results with their request for contracting officer consent. Requests to purchase based on unsuitability of items found shall include rationale for the determined unsuitability.

(End of clause)

## SPECIAL CONTRACT REQUIREMENTS

### H.1 ONSITE PERSONNEL--REPORTING REQUIREMENTS AND CHECKOUT PROCEDURES (GSFC 52.204-99) (SEPT 1999)

(a)LISTS. The Goddard Space Flight Center maintains a Locator and Information Services Tracking System (LISTS). The LISTS contains work and home location and contact information for personnel located onsite for a planned period of more than six months and for all personnel that have permanent NASA/GSFC Identification Badges, regardless of duty location.

(b) Form 24-27. The Contractor must complete and submit a GSFC Form 2427, "LISTS Data and Badge and Decal Information" for each employee that meets the conditions in paragraph (a) of this clause. The instructions for completing the form are contained in GSFC Form 2427a. These forms are available from GSFC stores stock. The GSFC Form 24-27 shall be submitted to the Contracting Officer's Technical Representative (COTR). The COTR will review the form(s) for accuracy and completeness and resolve any housing or access issues and return the approved form to the Contractor. The Contractor shall forward the approved form(s) to the GSFC Security Branch, Code 205.1, for data entry into the LISTS and to obtain appropriate badge(s) for the Contractor employee(s). The Contractor may contact the LISTS Manager, Institutional Support Office, Code 201, 301-286-2306, for assistance regarding the LIST System.

(c) Monthly report. The Contractor shall submit a monthly annotated LISTS Report. The GSFC LISTS Manager, Code 201, will furnish a LISTS print-out to the Contractor no later than the end of each month. The Contractor shall annotate this provided report to correct and update the information. This shall include a "mark out" of those employees who are no longer employed by the contractor or no longer meet the conditions of paragraph (a) of this clause. Any additional employees that meet the conditions in paragraph (a) shall be entered on the report, including the date the GSFC Form 24-27 for each such employee was submitted to the GSFC Security Branch. The annotated LISTS Report shall be submitted to the COTR, the GSFC Security Branch, Code 205.1, and to the LISTS Manager, Code 201, by the 10th calendar day of the month.

(d) Checkout Procedures. The Contractor shall ensure that all Contractor personnel that have NASA/GSFC issued identification, keys or other property that leave its employ or that no longer will be working onsite, process out through the GSFC Security Branch, Code 205.1 and return all such property. If not accomplished by the employee, the Contractor shall take action to ensure its accomplishment no later than 30 days after the employee's departure.

(End of clause)

### H.2 GOVERNMENT PREMISES--COMPLIANCE WITH PROCEDURES (GSFC 52.211-95) (NOV 1999)

(a) Compliance with procedures. While on Government premises, the Contractor shall comply with established requirements governing the conduct of personnel and the operation of the

facility. These requirements are set forth in NASA-wide or local installation management instructions, handbooks, or announcements. The following cover many of the requirements that must be met by contractors utilizing GSFC facilities:

| | |
|---|---|
| GMI 1040.5 | GSFC Emergency Management Program |
| GMI 1040.6 | GSFC Emergency Management Plan |
| GMI 1152.9 | Facilities Coordination Committee |
| GHB 1600.1 | Security Manual |
| GMI 1700.2 | GSFC Health and Safety Program |
| GMI 1772.1 | Center Smoking Policy |
| GMI 1780.1 | GSFC Confined Space Policy |
| GMI 1790.1 | Chemical Hygiene Plan |
| GMI 2540.2 | Administrative Communications, Facilities, Equipment and Services |
| GHB 8800.2 | GSFC Environmental Handbook |
| GMI 8840.1 | Center Paper Recycling Program |

Center Announcement No. 90-59--Contractor Business Use of Official Mail and of the Mail Services Center

Copies of the current issuances may be obtained at <http://gdms.gsfc.nasa..gov/gdms/main_guest.html> or from the Contracting Officer. The above list may be modified by the Contracting Officer to include additional issuances pertaining to the conduct of personnel and the operation of the facility.

(b) Telephone usage certification. If the installation provided property and services listed in NASA FAR Supplement clause 1852.24577 includes the use of telephones, the Contractor shall provide an annual certification that all such usage was in accordance with GHB 2540.2, "GSFC Administrative Communications Facilities, Equipment and Services". This certification shall be made in January of each year covering the preceding calendar year and at the conclusion of the Contractor's efforts onsite at the GSFC. The certification shall be submitted to the Contracting Officer with a copy to the Customer Interface Branch, Code 294.

(End of clause)

SPECIAL CONTRACT REQUIREMENTS

H.3 SMALL DISADVANTAGED BUSINESS PARTICIPATION--CONTRACT TARGETS (GSFC 52.219-91) (JAN 1999)

(a) This clause does not apply to, and should not be completed by, Small Disadvantaged Business (SDB) offerors unless the SDB offeror has waived the price adjustment evaluation adjustment [see para (c.) of FAR clause 52.219-23].

(b) FAR 19.1202-4(a) requires that SDB subcontracting targets be incorporated in the contract. Targets for this contract are as follows:

| *DOC SIC Major Group – | Dollar Target | Percent of Contract Value |
|---|---|---|
| 7371 | $40,070,868 | 20% |

*Department of Commerce Authorized Standard Industrial Classification Major Group

(c.) FAR 19.1202-4(b) requires that SDB concerns that are specifically identified by the offeror be listed in the contract when the extent of the identification of such subcontractors was part of the SDB evaluation subfactor. SDB concerns (subcontractors) specifically identified by the offeror are as follows:

Name of Concern(s)
Global Science and Technology, Inc. (GST)
6411 Ivy Lane
Suite 300
Greenbelt, MD 20770

The contractor shall notify the Contracting Officer of any substitutions of firms that are not SDB concerns.

(d) If the prime offeror is an SDB that has waived the price evaluation adjustment, the target for the work it intends to perform as a prime contractor is as follows:

| Dollars | Percent of Contract Value |
|---|---|
| N/A | |

(End of clause)

H.4 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (52.244-6) (OCT 1998)

(a) Definitions.

"Commercial item," as used in this clause, has the meaning contained in the clause at 52.202-1, Definitions.
"Subcontract," as used in this clause, includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or non developmental items as components of items to be supplied under this contract.

(c) Notwithstanding any other clause of this contract, the Contractor is not required to include any FAR provision or clause, other than those listed below to the extent they are applicable and as may be required to establish the reasonableness of prices under Part 15, in a subcontract at any tier for commercial items or commercial components:

(1) 52.222-26, Equal Opportunity (E.O. 11246);
(2) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (38 U.S.C. 4212(a));
(3) 52.222-36, Affirmative Action for Workers with Disabilities (29 U.S.C. 793); and
(4) 52.247-64, Preference for Privately Owned U.S.-Flagged Commercial Vessels (46 U.S.C. 1241) (flow down not required for subcontracts awarded beginning May 1, 1996).

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

H.5 USE OF RURAL AREA SMALL BUSINESSES (1852.219-74) (SEP 1990)

(a) Definitions.

"Rural area" means any county with a population of fewer than twenty thousand individuals.

"Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding under this contract, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) NASA prime and subcontractors are encouraged to use their best efforts to award subcontracts to small business concerns located in rural areas.

(c) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as small business concerns located in rural areas.

(d) The Contractor agrees to insert the provisions of this clause, including this paragraph (d), in all subcontracts hereunder that offer subcontracting possibilities.

(End of clause)

H.6 GOVERNMENT PROPERTY--COMPLIANCE WITH SAFETY STANDARDS (GSFC 52.223-92) (OCT 1988)

This contract involves the use of Government-furnished property or installation provided property. If any of the property does not conform to applicable Federal, state, or local safety standards, the Contractor shall promptly notify the Contracting Officer in writing (with a copy to the GSFC Safety Officer, Code 205.2).

(End of clause)

H.7 EXPORT LICENSES (1852.225-70) (FEB 2000)

(a) The Contractor shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at any Government installation, where the foreign person will have access to export-controlled technical data or software.

(c) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(d) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its subcontractors.

(End of clause)

SPECIAL CONTRACT REQUIREMENTS

## H.8 EARTH SCIENCES PROCUREMENT LIBRARY

The contractor acknowledges that it is in the interest of NASA to foster competitive acquisition of any follow-on contract for this scope of work. Accordingly, the contractor agrees to cooperate with the Contracting Officer to maintain an ongoing and current Earth Sciences Procurement Library, which Library shall be available during normal working hours to any interested contractor. Further, the Contractor agrees to provide any technical reports in a form that can be displayed in the Library and made fully available to any other contractor. However, this requirement shall not be construed to require the Contractor to reveal any company sensitive or proprietary materials or information.

— (End of text)

## H.9 ADDITIONAL CONTRACTOR RESPONSIBILITY

A. Contractor's Point of Contact:

The Contractor shall identify at least one on-site person who will be the Contractor's authorized focal point of contact for technical and administrative performance of all work hereunder. The employee shall, as a minimum, provide the single point of contact between the Contractor and the Contracting Officer's Technical Representative (COTR) designated under the contract.

B. Publication of Technical Papers:

The publication or presentation of technical papers by Contractor personnel, which are based upon work under this Contract may be permitted subject to prior consultation with the ATR. Consultation is typically limited to a review of authorship and to ensure that the Contractor has complied with H.7, Export Licenses (1852.225-70). If a question or concern arises between the ATR and the Contractor that cannot be resolved, the Contractor shall provide to the COTR the basis of the question or concern and if required, the Contracting Officer shall make the final determination as to whether all compliance requirements have been met. Any time that the contractor's consults the Government in order to publish or present technical papers, the Contractor agrees that in no way do the contents reflect an official GSFC position.

## H.10 SECURITY REQUIREMENTS FOR UNCLASSIFIED AUTOMATED INFORMATION RESOURCES (1852.204-76) (SEPT 1993)

(a) In addition to complying with any functional and technical security requirements set forth in the schedule and the clauses of this contract, the Contractor shall initiate personnel screening checks and obtain user responsibility agreements, as required by this clause, for each contractor employee requiring unescorted or unsupervised physical access or electronic access to the following limited or controlled areas, systems, programs and data: None known at this time.

(1) The Contractor shall submit a personnel security questionnaire (NASA Form 531, Name Check Request, for National Agency Check (NAC) investigations and Standard Form 85P, Questionnaire for Public Trust Positions, for specified sensitive positions) and a Fingerprint Card (FD-258 with NASA overprint in Origin Block) to the installation Security Officer for each Contractor employee who requires access. The required forms may be obtained from the installation security office. Employees may have fingerprints taken at the Building 9 Security Office or at any police department.

(i) Several months may be required for completion of complex personnel screening investigations. Background screening may not be required for employees with recent or current Federal Government investigations.

(ii) When employee access is necessary prior to completion of personnel screening, each contractor employee requiring access may be considered for escorted access. The installation Security Officer will establish the eligibility of proposed escorts.

(2) The Contractor shall ensure that each contractor employee requiring access executes any user responsibility agreements required by the Government prior to access. The Contractor shall provide signed copies of the agreements to the installation Security Officer for inclusion in the employee's security file. Unauthorized access is a violation of law and punishable under the provisions of 18 USC 1029, 18 USC 1030 and other applicable statutes.

(3) The Contractor shall notify the installation AIS Manager no later than the end of the day of the termination for cause of an authorized employee's access. The Contractor shall notify the COTR no later than ten days after an authorized employee no longer requires access for any other type of termination. Verbal notifications shall be confirmed in writing within thirty days.

(b) The Contractor shall incorporate this clause in all subcontracts where the requirements identified in paragraph (a) are applicable to performance of the subcontract.

(End of clause)

## H.11 CONTRACTOR'S SURVEILLANCE PLAN

The Contractor shall comply with the requirements established and set forth in Section J, Attachment F, entitled, "Contractor's Surveillance Plan."

## H.12 HANDLING OF DATA (GSFC 52.203-90) (JAN 1995)

(a) In the performance of this contract, it is anticipated that the Contractor may have access to, be furnished, or use the following categories of data (which may be technical data, computer

software, administrative, management information, or financial, including cost or pricing):

(1) Data of third parties which the Government has agreed to handle under protective arrangements; and

(2) Government data, the use and dissemination of which, the Government intends to control.

(b) In order to protect the interests of the Government and the owners, licensors and licensees of such data, the Contractor agrees, with respect to any such third party or Government data that is either marked with a restrictive legend, specifically identified in this contract, or otherwise identified in writing by the Contracting Officer as being subject to this clause, to:

(1) Use, disclose, and reproduce such data only to the extent necessary to perform the work required under this contract;

(2) Allow access to such data only to those of its employees that require access for their performance under this contract;

(3) Preclude access and disclosure of such data outside the Contractor's organization; and

(4) Return or dispose of such data, as the Contracting Officer may direct, when the data is no longer needed for contract performance.

(c) The Contractor agrees to inform and instruct its employees of its and their obligations under this clause and to appropriately bind its employees contractually to comply with the access, use, disclosure, and reproduction provisions of this clause.

(d) In the event that data includes a legend that the Contractor deems to be ambiguous or unauthorized, the Contractor may inform the Contracting Officer of such condition. Notwithstanding such a legend, as long as such legend provides an indication that a restriction on use or disclosure was intended, the Contractor shall treat such data pursuant to the requirements of this clause unless otherwise directed, in writing, by the Contracting Officer.

(e) Notwithstanding the above, the Contractor shall not be restricted in use, disclosure, and reproduction of any data that:

(1) Is, or becomes, generally available or public knowledge without breach of this clause by the Contractor;

(2) Is known to, in the possession of, or is developed by the Contractor independently of any disclosure of, or without reference to, proprietary, restricted, confidential, or otherwise protectible data under this clause;

(3) Is rightfully received by the Contractor from a third party without restriction;

(4) Or is required to be produced by the Contractor pursuant to a court order or other Government action.

If the Contractor believes that any of these events or conditions that remove restrictions on the use, disclosure, and reproduction of the data apply, the Contractor shall promptly notify the Contracting Officer of such belief prior to acting on such belief, and, in any event, shall give notice to the Contracting Officer prior to any unrestricted use, disclosure, or reproduction of such data.

(End of clause)

H.13 52.215-90 REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFEROR (GSFC 52.215-90) (NOV 1999)

In accordance with FAR 15.204-1(b), the completed and submitted Section K, "Representations, Certifications, and Other Statements of Offeror", are incorporated by reference in this resulting contract.

(End of clause)

# CONTRACT CLAUSES

## I.1 SECTION I CLAUSES INCORPORATED BY REFERENCE

| | |
|---|---|
| (52.202-1) | DEFINITIONS (OCT 1995) |
| (52.203-3) | GRATUITIES (APR 1984) |
| (52.203-5) | COVENANT AGAINST CONTINGENT FEES (APR 1984) |
| (52.203-6) | RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1995) |
| (52.203-7) | ANTI-KICKBACK PROCEDURES (JUL 1995) |
| (52.203-8) | CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997) |
| (52.203-10) | PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997) |
| (52.203-12) | LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997) |
| (52.204-4) | PRINTING/COPYING DOUBLE SIDED ON RECYCLED PAPER (JUN 1996) |
| (52.209-6) | PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995) |
| (52.211-15) | DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEPT 1990) |
| (52.215-2) | AUDIT AND RECORDS--NEGOTIATION (JUNE 1999) |
| (52.215-8) | ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT (OCT 1997) |
| (52.215-11) | PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA—MODIFICATIONS (OCT 1997) |
| (52.215.13) | SUBCONTRACTOR COST OR PRICING DATA—MODIFICAITONS (OCT 1997) |
| (52.215-14) | INTEGRITY OF UNIT PRICES (OCT 1997) |
| (52.215-15) | PENSION ADJUSTMENTS AND ASSET REVERSIONS (DEC 1998) |
| (52.215-18) | REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS (OCT 1997) |
| (52.215-19) | NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997) |
| (52.215-21) | REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA—MODIFICATIONS (OCT 1997) |
| (52.216-7) | ALLOWABLE COST AND PAYMENT (APR 1998) |
| (52.219-8) | UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 1999) |
| (52.219-9) | SMALL BUSINESS SUBCONTRACTING PLAN (OCT 1999)--ALTERNATE II (JAN 1999) |
| (52.219-16) | LIQUIDATED DAMAGES--SUBCONTRACTING PLAN (JAN 1999) |
| (52.219-25) | SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM--DISADVANTAGED STATUS AND REPORTING (OCT 1999) |
| (52.222-20) | WALSH-HEALEY PUBLIC CONTRACTS ACT (DEC 1996) |
| (52.222-21) | PROHIBITION OF SEGREGATED FACILITIES (FEB 1999) |
| (52.222-26) | EQUAL OPPORTUNITY (FEB 1999) |
| (52.222-29) | NOTIFICATION OF VISA DENIAL (FEB 1999) |
| (52.222-35) | AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998) |
| (52.222-36) | AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998) |
| (52.222-37) | EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999) |
| (52.223-5) | POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998) |
| (52.223-6) | DRUG FREE WORK PLACE (JAN 1997) |
| (52.223-14) | TOXIC CHEMICAL RELEASE REPORTING (OCT 1996) |
| (52.225-13) | RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (FEB 2000) |
| (52.226-1) | UTILIZATION OF INDIAN ORGANIZATIONS AND INDIANOWNED ECONOMIC ENTERPRISES (MAY 1999) |

## CONTRACT CLAUSES

| | |
|---|---|
| (52.227-1) | AUTHORIZATION AND CONSENT (JUL 1995) |
| (52.227-2) | HISTORICALLY BLACK COLLEGE OR UNIVERSITY AND MINORITY INSTITUTION REPRESENTATION (MAY 1997) |
| (52.227-11) | PATENT RIGHTS—RETENTION BY THE CONTRACTOR (SHORT FORM) (JUN 1997) as modified by NASA FAR Supplement 1852.227-11 |
| (52.227-14) | RIGHTS IN DATA-GENERAL (JUN 1987) as modified by NASA FAR Supplement 1852.227-14 - as modified by ALTERNATE II (JUN 1987) |
| (52.228-7) | INSURANCE--LIABILITY TO THIRD PERSONS (MAR 1996) |
| (52.230-2) | COST ACCOUNTING STANDARDS (APR 1998) |
| (52.230-6) | ADMINISTRATION OF COST ACCOUNTING STANDARDS (NOV 1999) |
| (52.232-17) | INTEREST (JUN 1996) |
| (52.232-22) | LIMITATION OF FUNDS (APR 1984) |
| (52.232-23) | ASSIGNMENT OF CLAIMS (JAN 1986) |
| (52.232-25) | PROMPT PAYMENT (JUN 1997) (b)(2), second sentence shall have a 30 day period for any financing payments. |
| (52.232-34) | PAYMENT BY ELECTRONIC FUNDS TRANSFER--OTHER THAN CENTRAL CONTRACTOR REGISTRATION (MAY 1999)[para (b)(1) fill-in (hereafter: "designated office"--Accounts Payable Section, Mail Code 151.3A, Goddard Space Flight Center) no later than concurrent with the first request for payment.] |
| (52.233-1) | DISPUTES (DEC 1998) |
| (52.233-3) | PROTEST AFTER AWARD (AUG 1996)--ALTERNATE I (JUN 1985) |
| (52.237-2) | PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION (APR 1984) |
| (52.237-3) | CONTINUITY OF SERVICES (JAN 1991) |
| (52.242-1) | NOTICE OF INTENT TO DISALLOW COSTS (APR 1984) |
| (52.242-4) | CERTIFICATION OF FINAL INDIRECT COSTS (JAN 1997) |
| (52.242-13) | BANKRUPTCY (JUL 1995) |
| (52.242-15) | STOP WORK ORDER (AUG 1989) ALTERNATE I (APR 1984) |
| (52.243-2) | CHANGES--COST-REIMBURSEMENT (AUG 1987)-- ALTERNATE II (APR 1984) |
| (52.244-2) | SUBCONTRACTS (AUG 1998)--ALTERNATE I (AUG 1998) {paragraph (e) is "Professional and consultant costs as defined at FAR 31.205-33" and paragraph (k) is (None) |
| (52.244-5) | COMPETITION IN SUBCONTRACTING (DEC 1996) |
| (52.245-1) | PROPERTY RECORDS (APR 1984) |
| (52.245-5) | GOVERNMENT PROPERTY (COST REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS (JAN 1986) (DEVIATION) (JULY 1995)--(g)(5) of the clause shall read as follows: "The contractor shall notify the contracting officer upon loss or destruction of, or damage to, Government property provided under this contract, with the exception of low value property for which loss, damage, or destruction is reported at contract termination, completion, or when needed for continued performance. The Contractor shall take all reasonable action to protect the Government property from further damage, separate the damaged and undamaged Government property, put all the affected Government property in the best possible order, and furnish to the Contracting Officer a statement of--" The balance of (g)(5) is unchanged. |
| (52.245-19) | GOVERNMENT PROPERTY FURNISHED "AS IS" (APR 1984) |
| (52.246-5) | INSPECTION OF SERVICES COST REIMBURSEMENT (APR 1984) |
| (52.246-25) | LIMITATION OF LIABILITY--SERVICES (FEB 1997) |
| (52.247-1) | COMMERCIAL BILL OF LADING NOTATIONS (APR 1984) |
| (52.247-34) | F.O.B. DESTINATION (NOV 1991) |
| (52.247-63) | PREFERENCE FOR U.S.-FLAG AIR CARRIERS (JAN 1997) |
| (52.247-67) | SUBMISSION OF COMMERCIAL TRANPORTATION BILLS TO THE GENERAL SERVICES ADMINISTRATION FOR AUDIT (JUN 1997) |
| (52.248-1) | VALUE ENGINEERING (FEB 2000) |

CONTRACT CLAUSES

| | |
|---|---|
| (52.249-6) | TERMINATION (COST-REIMBURSEMENT) (SEP 1996) |
| (52.249-14) | EXCUSABLE DELAYS (APR 1984) |
| (52.251-1) | GOVERNMENT SUPPLY SOURCES (APR 1984) |
| (1852.208-81) | RESTRICTIONS ON PRINTING AND DUPLICATING (AUG 1993) |
| (1852.215-84) | OMBUDSMAN (OCT 1996) The installation Ombudsman is William F. Townsend at 301-286-5066. |
| (1852.216-89) | ASSIGNMENT AND RELEASE FORMS (JUL 1997) |
| (1852.219-77) | NASA MENTOR-PR0TEGE PROGRAM (MAY 1999) |
| (1852.223-70) | SAFETY AND HEALTH (MARCH 1997) |
| (1852.227-70) | NEW TECHNOLOGY (NOV 1998) |
| (1852.242-72) | OBSERVANCE OF LEGAL HOLIDAYS (AUG 1992)--ALTERNATE II (SEP 1989) |
| (1852.243-71) | SHARED SAVINGS (MAR 1997) |

(End of By Reference Section)

## I.2 APPROVAL OF CONTRACT (52.204-1) (DEC 1989)

This contract is subject to the written approval of the Procurement Officer and shall not be binding until so approved.

(End of clause)

## I.3 LIMITATION ON WITHHOLDING OF PAYMENTS (52.232-9) (APR 1984)

If more than one clause or Schedule term of this contract authorizes the temporary withholding of amounts otherwise payable to the Contractor for supplies delivered or services performed, the total of the amounts withheld at any one time shall not exceed the greatest amount that may be withheld under any one clause or Schedule term at that time; provided that this limitation shall not apply to—

(a) Withholdings pursuant to any clause relating to wages or hours of employees;

(b) Withholdings not specifically provided for by this contract;

(c) The recovery of overpayments; and

(d) Any other withholding for which the Contracting Officer determines that this limitation is in appropriate.

(End of Clause)

## I.4 CLAUSES INCORPORATED BY REFERENCE (52.252-2) (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

Federal Acquisition Regulation (FAR) clauses:

http://www.arnet.gov/far/

NASA FAR Supplement (NFS) clauses:

http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

(End of clause)

## I.5 COMPUTER GENERATED FORMS (52.253-1) (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

(c) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

(End of clause)

## I.6 NASA 8 PERCENT GOAL (1852.219-76) (JUL 1997)

(a) Definitions.

"Historically Black Colleges or University", as used in this clause means an institution determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institutions", as used in this clause, means an institution of higher education meeting

the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)) which for the purposes of this clause includes a Hispanic-serving institution of higher education as defined in section 316(b)(1) of the Act (20 U.S.C. 1059c(b)(1)).

"Small disadvantaged business concern", as used in this clause, means a small business concern that (1) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and (2) has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more of these entities, which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR 124.

"Women-owned small business concern", as used in this clause, means a small business concern (1) which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women, and (2) whose management and daily business operations are controlled by one or more women.

(b) The NASA Administrator is required by statute to establish annually a goal to make available to small disadvantaged business concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns, at least 8 percent of NASA's procurement dollars under prime contracts or subcontracts awarded in support of authorized programs, including the space station by the time operational status is obtained.

(c) The contractor hereby agrees to assist NASA in achieving this goal by using its best efforts to award subcontracts to such entities to the fullest extent consistent with efficient contract performance.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as small disadvantaged business concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns.

(End of clause)

## I.7 MINIMUM INSURANCE COVERAGE (1852.228-75) (OCT 1988)

The Contractor shall obtain and maintain insurance coverage as follows for the performance of this contract:

(a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least $100,000, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(b) Comprehensive general (bodily injury) liability insurance of at least $500,000 per occurrence.

(c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least $200,000 per person and $500,000 per occurrence for bodily injury liability and $20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:

"The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."

(e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least $200,000 per person and $500,000 per occurrence for bodily injury, other than passenger liability, and $200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least $200,000 multiplied by the number of seats or passengers, whichever is greater.

(End of clause)

CONTRACT CLAUSES

## I.8 EMERGENCY EVACUATION PROCEDURES (1852.237-70) (DEC 1988)

The Contractor shall assure that its personnel at Government facilities are familiar with the functions of the Government's emergency evacuation procedures. If requested by the Contracting Officer, the Contractor shall designate an individual or individuals as contact points to provide for efficient and rapid evacuation of the facility if and when required.

(End of clause)

SECTION J OF NAS5-00220

LIST OF ATTACHMENTS

J.1 LIST OF ATTACHMENTS (GSFC 52.211-101) (OCT 1988)

The following attachments constitute part of this contract:

| ATTACHMENT | DESCRIPTION | DATE | NO. OF PAGES |
|---|---|---|---|
| A | STATEMENT OF WORK | 02/03/00 | 8 |
| B | SOW ADDENDUM | 12/01/00 | 22 |
| C | LIST OF GOVERNMENT FURNISHED PROPERTY | 11/28/00 | 1 |
| D | LIST OF CONTRACTOR ACCESS TO GOVERNMENT CONTROLLED PROPERTY | 01/18/00 | 2 |
| E | SAFETY AND HEALTH PLAN | 05/03/00 | 10 |
| F | CONTRACTOR'S SURVEILLANCE PLAN | 05/03/00 | 10 |

(End of Clause)

# Attachment A
# Statement of Work
# February 3, 2000

## 1.0 INTRODUCTION

### 1.1 Earth Sciences

The Goddard Space Flight Center (GSFC) enables discovery through leadership in Earth and Space sciences. The GSFC plays a major role in the new interdisciplinary field of Earth System Science by providing programmatic leadership for the National Aeronautics and Space Administration's (NASA's) Earth Sciences Systems Programs. The GSFC will work with our partners to identify and develop the technology needs for advanced Earth Science sensors, faster and at less cost. Research in this area will advance understanding of the Earth as an environmental system by determining how its components have developed, how the function, how the interact with one another, and how they evolve on various time scales. This will enable Earth scientists to quantify the practical impacts that both natural and human activities will have on the Earth's resources during the next decade and over the next century.

### 1.2 Space Sciences

The GSFC is also dedicated to leading the space science community in space-based physics and astronomy and to creating opportunities for conducting research through a broad variety of flight opportunities. The development of advanced technology designed to enhance scientific capabilities at an affordable cost is promoted.

### 1.3 Partnering in Earth and Space Sciences

In collaboration with partners worldwide, the GSFC continues to seek answers about how the universe formed, what it is made of, how its components interact, and how it evolves. The GSFC also contributes to the quest to learn how stars and their planetary systems form and evolve. The GSFC continues to take part in determining the nature of the Sun's interaction with its surroundings. Similarly, the GSFC works with others to discover the properties of interplanetary space as well as the plasma environments of the planets.

### 1.4 Technology

The GSFC is committed to the development and infusion of cutting-edge technology to increase mission performance and capabilities while reducing the costs of performing scientific measurements from space. The GSFC provides Agency leadership to advance next-generation spacecraft, sensor, and instrument technology. This leadership will result in advance Earth-observing satellites and space science missions at reduced costs.

By creating and maintaining synergy among the science, engineering, and project management disciplines, the GSFC will ensure the maximum return on its technology investment.

The GSFC plans and coordinates technological research and development both within the Center and with external partners and serves as a catalyst for forming teams among academic, Government, and commercial concerns to draw on the best capabilities of each in developing new technologies. We also transfer the technology that is developed to the private sector to strengthen the national economy.

## 2.0 PURPOSE

The purpose of this contract is to provide computer system management, including the operating system and application software, the development and use of scientific and engineering data analysis systems, and the engineering efforts that develop new technology for scientific instrumentation for Space and Earth Sciences research at the GSFC.

## 3.0 SCOPE

The services required under this contract support a broad range of science disciplines, including solar and space plasma physics, astrophysics and astronomy, planetary studies, atmospheric science and climatology, oceanography, land processes, geodynamics, and solid earth geographics. Research and information technology services includes scientific data analysis; modeling and simulation of physical processes; development of flight project data systems, including field experiments, development of large-scale data management, archival and delivery systems, systems analysis, and programming; and includes engineering, technology, development and research network engineering. The contractor shall support work in all these areas.

Work carried out under this contract is in support of all GSFC organizational elements which are funded in GSFC's strategic areas of responsibility of Earth Sciences, Space Sciences and Technology. The GSFC also has other areas of strategic responsibility which support NASA's programs and Enterprises and new areas are being assigned by Headquarters from time to time. Most of the services provided will be in direct support to the Science and Engineering organizational entities at the GSFC. However, these other areas of strategic responsibility shall also be supported.

## 4.0 RESPONSIBILITY AND GENERAL TRACKING REQUIREMENTS

The work to be performed during the life of this contract is distinct and varied by Directorate, Laboratory or Division, Branch, and other government internal customers. The contractor is responsible for the overall computer system management and engineering efforts that develop new technology for scientific instruments as described in

Paragraph 2.0 and 3.0 above. Funding for the contract comes from various sources and, as such, requires a unique and separate way of accounting.

The SOW Addendum, Attachment B, describes, in as much detail as possible, the current activities involved in this overall support by Directorate, Laboratory or Division, Branch, and internal customers and by funding source. These activities are expected to continue at the start of the contract. The 7-digit identification number designates the specific funding source, and the contractor is expected to track progress and costs at this level and as specifically provided for the Contract schedule. As the need arises, new or modified funding identification may be required to reflect a shift or addition to the work being performed. The Contractor is responsible for generating, tracking, and reporting the new and/or modified funding sources along with those identified at the start of the contract. The process of how funding sources are to be designated is identified in the Contract schedule. The parties may agree, from time to time, to administratively modify the SOW Addendum to reflect funding updates. These updates will be considered within the general scope of this contract, and should not be construed as work over and above the contract requirements.

## 5.0 PERFORMANCE REQUIREMENTS

The Contractor shall provide support in the functional areas listed below.

5.1 Scientific Data Processing
5.2 Modeling on Data Analysis
5.3 Information Extraction Support
5.4 Multi-mission Data Archival and Analysis
5.5 Computer System(s) Management
5.6 Mission Feasibility Planning
5.7 Systems Development/Systems Engineering
5.8 Applications Software Development and Use
5.9 Database Creation and Data Archiving
5.10 Production Processing
5.11 Telecommunications
5.12 Ground Support
5.13 User Support
5.14 Engineering Support
5.15 Education Outreach

Each of these functional areas is described below.

### 5.1 Scientific Data Processing

The scientific data processing support requires the design of efficient input/output and data packing/unpacking techniques: the application of total instrument calibration results to experiment data: data reformatting operations; handling and correlating satellite and detector housekeeping information required for data analysis; elimination of data overlap

and merging of orbit and attitude data with experiment data where necessary; applying the appropriate data reduction to algorithms to process the raw initial data into final physical units; and implementing numerical algorithms.

### 5.2 Modeling and Data Analysis

The data analysis operations require computer programs encompassing such areas as mathematical modeling of physical theories and associated numerical and scientific analyses, pattern recognition, simulation of physical systems, image data analysis, dynamic interaction with graphical displays, and data correlation studies using statistical techniques. This requires problem analysis, algorithm restructuring and program implementation for integration both of new supercomputing technology and advanced workstations via high-speed networks.

### 5.3 Information Extraction Support

The information extraction support requirement includes mathematical analysis and computer implementation of techniques to perform such functions as radiative transfer and microwave scattering analysis, image enhancement, noise removal, radiometric corrections, geometric correction, registration, filtering and other transformations, pattern recognition, multivariate classification, and change detection of Earth resources and meteorological image data. Included will be conducting surveys or literature searches, gathering or generating related data, setting up and conducting tests, analysis of test results, producing reports of the investigation, recommending solutions and development, and implementing techniques to solve particular information extraction problems.

### 5.4 Multi-mission Data Archival and Analysis

The Contractor shall provide support in astrophysics and other science communities with access to archival data from X-ray and Gamma ray and other flight missions. This will include maintaining and disseminating data from previous and concurrent missions as well as for missions in many disciplines; providing software and data analysis support for these data sets; developing and maintaining tools for combining the data from the various missions and for multi-data set analysis; providing a uniform environment for analyzing and combining the data from the various missions; developing and maintaining catalogs of observations and ancillary information for data holdings relevant to that wavelength band; providing online access to catalogs of results from each mission; deriving a uniform set of data products from each mission; coordinating data, software and media standards with other parts of the Astrophysics Data System, including other multi-mission centers; writing and distributing a regular newsletter; and distributing the level 1 raw data, the derived level 2 data products, catalogs of results, the calibrations, the analysis software, and the documentation.

### 5.5 Computer System(s) Management

The Contractor shall provide system administration and management that includes items such as installing, updating, and testing new releases of manufacturer-supplied operating systems, and commercial software packages for evolving science systems. The Contractor shall provide programming support for all phases of system software development. This includes such items as the development, modification and enhancement of operating systems, systems software, data management routines, image display and control functions, various system support routines, special device handlers, and diagnostics for special peripherals. Setting up authorization and accounting files and procedures, performing backups, setting up and monitoring computer security, performing the general maintenance functions required of system management, performing error analysis, monitoring/tailoring system performance, consulting and other activities that are required of system management.

The Contractor shall provide the full range of science services required for fully utilizing a spectrum of scientific services on a spectrum of computer systems from small standalone workstations to a networked large-scale supercomputing facility. This includes documentation, problem tracking and resolution, code optimization or conversion, algorithm restructuring, telephone or online assistance, software tailoring to meet user requirements, training, performance analysis of application packages, and other activities that are required to support system activities. When appropriate, coordination with NASA's Outsourcing Desktop Initiative Network (ODIN) contractor is required.

### 5.6 Mission Feasibility Planning

Technical inputs for mission planning, including development of activity schedules, resource estimates and management documentation such as mission plans shall be provided. The Contractor shall also provide supporting technical analysis for GSFC mission integration with other organizations including other NASA field centers, science working groups, advisory groups, investigators, and other entities. The Contractor shall identify conflicting needs and propose solutions. The Contractor shall provide supporting technical analysis for the preparation of technical papers, reports, proposals, and newsletters. Technical support also includes the editing function for revising and updating documents, coordinating the physical production and distribution of various mission documents.

The Contractor shall establish and maintain the design, development, and maintenance of mission databases including payload, hardware, experiment, requirements traceability, operational and documentation databases.

The Contractor shall organize and coordinate mission feasibility meetings and conferences as well as develop materials such as brochures, videotapes, web sites, and displays, coordinating and participating in events. The Contractor shall support local and national physical sciences education programs including the preparation of classroom materials.

### 5.7 Systems Development/Systems Engineering

The Contractor shall be required to support all phases of systems development/systems engineering. This includes such areas as requirements definition and analysis; conceptual and detail design; integration; hardware sizing and validation; the development of technical documents including information technology documents for targeted systems; software configuration control; and the development and control of external interfaces including digital communication networks. Such support may include aspects of mechanical, electrical, and digital engineering along with aspects of the computer sciences.

In support of the various scientific research, the Contractor shall provide research, design, integration and enhancement of technical systems consisting of both hardware and/or software, and the integration of the same.

### 5.8 Applications Software Development and Use

The Contractor shall, in coordination with users, define specific design requirements, identifying and understand applicable hardware and system software capabilities and constraints, documenting the proposed design, coding, testing, documenting and maintaining software packages, implementing software configuration control, and demonstrating and/or training users in program or system operation.

The applications software development will typically be in the areas of image enhancement, noise removal, CAD/CAM, radiometric correction, geometric correction, registration, filtering and other transformations, change detection, multi-spectral classification, statistical and mathematical analysis, and related image and non-image data analysis functions. Maintenance and modification to existing operations applications software shall also be required. This function includes the removal of software errors, changing the code for improved operations, and making additions to provide new capabilities. Applications software development also includes the visualization of science data in multi-media form, which may be suitable for research purposes or the general public.

### 5.9 Database Creation and Data Archiving

The date archiving, database creation, data warehousing, data mining and display functions of the rapidly evolving data management technologies require the Contractor to provide for computing systems to automatically generate data catalogs, file statistics, provide data quality summaries and retrieval of data and extraction of information and knowledge from the science archives and databases created.

### 5.10 Production Processing

This function includes the preparation of computer runs for job submission and the use of computer programs for the reduction and evaluation of computational results. The Contractor shall maintain files and records of all data received and of all data processed, to set up and maintain science information libraries across a range of technologies, online

work files and production logs. The Contractor shall provide for the creation and operation of graphical displays for interactive processing of data displayed modern visualization equipment and on hard copy devices, and for the operation of other computer-driven equipment used to analyze or reduce data. Display of other scientific and engineering data, data entry, and other operations analysis work shall be required.

### 5.11 Telecommunications

The Contractor shall plan, develop, implement, and test advanced telecommunications systems, supporting all evolving high performance network/web based science systems. The Contractor shall monitor performance, gather statistics, generate reports, evaluate performance, troubleshoot, analyze and resolve problems in the area of networking systems.

### 5.12 Ground Support

The real-time ground support systems shall require software for telemetry acquisition and storage, various data displays, experiment monitoring, and instrument commanding. In addition, the Contractor shall be required to provide systems support such as systems generation and local modification to the operational system. This includes science field experiments, nationally and internationally.

### 5.13 User Support

The Contractor shall schedule classes and seminars, assisting in a user support capacity. The Contractor shall train users in order to familiarize them with applications software packages for image processing and computer graphics. Also included is working with and setting up visiting scientist programs, field campaigns and mission support, outreach activities, science education support and technical support for science conferences.

### 5.14 Engineering Support

All basic, applied and development facets, including design, development, fabrication and verification of space instrumentation is required. The Contractor shall also provide engineering designs and analyses of an instrument, drafting component sections, development of electronic components, field testing, and the verification of acceptable performance of systems, subsystems, and instrumentation when coupled with the computer support.

### 5.15 Educational Outreach

The Contractor shall be responsible for the preparation of educational materials via written, electronic, web, and audio-visual vehicles and formats that include publications, posters, instruments, apparatus, items, videos, software, hardware, CD Roms, laser discs, and other technology based mediums.

The sciences educational programs at the Center encompass outreach and partnering; development activities with schools, teachers, and students; support of generation of educational technology; the sponsorship or creation of materials; and activities to improve Earth and Space science literacy in the general public and specific audiences.

Examples of the activities include writing, editing, desktop publishing, design, layout, imagery, animation, communications, publicity, documentation, presentations, visitations, field trips, and support of meetings, conferences, and collaborative projects from a wide range of educators and interest groups.

# ATTACHMENT B
## Statement of Work Addendum
## December 1, 2000

**The Contractor shall support the Earth Sciences Systems Program Office. The support is to provide technical analysis for the Earth Observing Systems and Earth System Science which form the Earth Observing System (EOS), part of NASA's Earth Science Systems Program, which is NASA's major contribution to the Global Change Research Program (GCRP).**

17-009-00 The Contractor shall develop earth science and EOS-related materials for public awareness. The Contractor shall organize and conduct Science Writers' Workshops, typically 30 days prior to an EOS launch, for the purpose of increasing the awareness of the science press.

**The Contractor shall support the Flight Projects Directorate. The support is to provide technical analysis to the Flight Programs and Projects Directorate Science elements for organizing and leading the resources needed to effectively implement projects for the purpose of obtaining scientific information for research in Earth Science, Space Science, and technology. This analysis is for flight, ground, and science performed at the GSFC as part of the overall Earth and Space Science Enterprises.**

(ESDIS)

50-003-00 The Contractor shall conduct engineering and technical studies, preparing findings regarding various standards including data formats and science terminology. Tutorials, demonstrations, and concept papers of HDF, HDF-EOS and related software may be required. The Contractor shall consider areas such as standards, community outreach, technical user support, data and metadata modeling, standard-related software tools development, porting and testing in performing this work. Assistance to various projects, data centers, science groups and users in the development of EOSDIS standards may also be required. International activities in the areas of data standards and formats are also supported.

52-002-00 The Contractor shall support activities in the areas of network technologies prototyping, network security, network engineering of the EOSDIS networks, and ESDIS systems administration.

**The Contractor shall support the Applied Engineering and Technology Directorate. The support provides for the full range of engineering disciplines needed to end-to-end conceptualization, development, and use of Earth and Space Science missions, including delivery of appropriate science produces. The scope covers mechanical systems, electrical systems, instrument technology, guidance, navigation and control, and information systems as well as a broad range of advanced technology activities in order to meet current and future science mission needs.**

50-001-A0 The Contractor shall provide sustaining engineering and science/operations support for the IMS Web Gateway, CINTEX, and the Independent IMS.

42-005-00 The Contractor shall provide educational support to the ESDIS Science Operations Office. The Contractor shall educate a broad range of users and potential users about the data available from the DAACs and other cooperating data centers. The Contractor shall also provide scientific and engineering support for ESDIS efforts in the area of science data and external interface management.

50-002-00 The Contractor shall provide support to the ESDIS Project science data planning and interface management activity. Support includes serving as liaison to the scientific community, to the set of EOSDIS DAAC's, and to other cooperating data centers; maintaining an on-line database of information about current and future DAAC and Cooperating Data Center holdings; requirements analyses; and reviewing of documentation pertaining to science data and interfaces, making recommendations.

The Contractor shall compile and analyze science information from current and projected data holdings. Results may be published for distribution at various scientific and educational meetings.

50-005-C0 The Contractor shall design, build, test and maintain a system that allows the World Wide Web (WWW) access to the EOSDIS Version 0 systems, and support functionality required. The Contractor shall also address technical and technological questions pertaining to metadata interchange mechanisms for the IIMS clearinghouse architecture and propose solutions.

50-007-C0 The Contractor shall provide interoperability between DIAL and V0 IMS. The Contractor shall investigate CIP technology for providing interoperability between ICS and the DIAL sites. A user-friendly interface to DIAL should be provided. Animation and coastline overlays, color maps and cross-granule sub-setting, and DIAL documentation may be required.

**(Mechanical Systems Center) This support covers mechanical systems development and cutting edge technology in support of Earth and Space Science through the use of innovative technical analysis which provides multidisciplinary capabilities and technology development to design, analyze, fabricate, integrate, test, and launch advanced scientific instruments and support platforms for a variety of ground-based, suborbital, and orbital Earth and Space Science missions.**

54-004-00 The Contractor shall fabricate custom parts from specifications, released drawings, or sketches and shall hold required tolerances in conventional linear form or geometric. The Contractor shall also perform precision assembly of mechanisms and components during the development and flight stages of hardware fabrication and assembly.

54-006-00 The Contractor shall provide NGST ISIM mechanical design concepts; definition details for the "yardstick" instruments; and descriptive drawings detailing the proposed conceptual design.

54-007-00 The objective of this activity is to provide technical support for the development of a micro shutter device for the Multi-Object Spectrometer (MOS) instrument proposed for the Next Generation Space Telescope (NGST)

56-002-00 Provide support for the photonics and optoelectronics work in Code 562 labs including: Evaluating radiation hardness of optical fiber, Evaluating optical fibers for space flight, Generating qualifications standards space flight optical fiber, and Researching radiation effects on fiber optic cable assemblies for space flight applications.

**(Guidance, Navigation & Control Center) This support covers technical analysis in guidance, navigation, and control (GN&C) systems, engineering, operations and mission analysis for science support to Integrated Product Teams; development of new guidance, navigation and control systems, sensors, actuators, propulsive devices and their interfaces; and support flight dynamics products, services and expertise.**

57-001-00 The Contractor shall support low temperature physics and astrophysics including support for flight hardware development and currently employed on the MAP spacecraft thruster research and development.

57-002-00 The Contractor support the development of TRIANA Propulsion Module flight hardware; development of TRIANA Propulsion Module GSE; and collection and reduction of TRIANA Propulsion Module data.

**(Instrument Technology Center) This support covers technical analysis in researching and developing state-of-the-art science instrument technology. It supports the advancement of the development of Earth and Space Science instruments by providing technical expertise and facilities to teaming partnerships to meet the needs of the Center in being a world class instrument technology center serving the needs of NASA and its customers.**

58-001-00 The Contractor shall develop and enhance prototype tools for better human ease of use and understanding applied to ECS metadata written in Object Description Language (ODL). Particular features, design decisions, and environment or helper application choices for each phase of prototype development shall be coordinated with the Government.

71-003-00 The Contractor shall support low temperature physics and astrophysics in the development, construction, and qualification testing of hardware for XRS, and the DDF programs. The Contractor shall also develop software to interface with test equipment for the purpose of data collection and databases shall be generated for analysis and archival purposes.

The Contractor shall also provide technical support in advanced technology development of the Penetration Depth Thermometer (PDT) and Two State SQUID Array (TSSA) amplifier; development of test hardware for mechanical refrigerator and testing of mechanical refrigerators; XRS ADR development and testing; preparation of hardware for test including electrical and mechanical interfaces; preparation of test set-up; preparation computer interfaces; and assistance with data collection and reduction.

71-006-00 The Contractor shall provide technical support to the UV Scatterometer which is capable of measuring both near-in and far-angle scatter of optical surfaces in the UV wavelength region with a high dynamic range of sensitivity and high spatial resolution, and to grating modeling.

**(Information Systems) This covers technical analysis for software engineering laboratory, best practices, data capture, processing, visualization, and distribution; spacecraft health and safety, real time commanding, autonomous operations; mission and science planning and scheduling; end-to-end systems engineering, ground systems management; web applications; data mining, network engineering; embedded real-time software for spacecraft onboard computers; and guidance and navigation, attitude and orbit determination.**

**The Contractor shall support the Space Sciences Directorate.**

**(Space Physics Data Facility) This support is for technical analysis to enhance the scientific return from NASA programs in the space physics sciences and includes definition, development, operation and promotion of collaborative efforts in the collection and utilization of space physics data and models to respond to the research needs of the space physics community.**

66-003-D0 The Contractor shall provide software development, production data processing and analytic support, program maintenance, documentation, and data base management support for the Laboratory for High Energy Astrophysics (LHEA) cosmic ray experiments aboard the IMP-6, -7, and -8.

**(Laboratory for High Energy Astrophysics) The support is for excellence in scientific research by making appropriate high energy astrophysics observations, interpreting the findings, and pursuing advanced theoretical research. Aid development of increasingly more capable instrumentation for observation and to disseminate the new technology developed and to communicate the scientific results of high energy astrophysics research to the scientific community and outreach to the public in meaningful ways making data available to the astrophysics community in a useful form.**

66-001-00 The Contractor shall be responsible for the systems management of the LHEA computing environment including hardware and software for computers and networks.

The Contractor shall assist in defining requirements for the acquisition of new hardware equipment including workstations, peripheral devices such as juke boxes, disks, printers, tape drivers, optical disk drivers, and memory.

The Contractor shall assist in defining requirements for the acquisition of new and updated software including science related software such as IRAF/SDAS/PROS, IDL, and Mongo; system software such as Sun Solaris, Digital UNIX, A.M.A.N.D.A., Utilities; word/text processing software such as TeX/LaTeX and Framemaker; and other software such as Mathematica, NAG, and Object Center.

The Contractor shall be responsible for installing and configuring new hardware and software acquired.

The Contractor shall be responsible for network management including attaching hosts to the network, troubleshooting system and network related problems. Coordination with the ODIN vendor, when appropriate, is also required.

The Contractor shall be responsible for providing optimal and standardized user workstation configurations of files, applications, and file system structures as well as user support.

The Contractor shall be responsible for planning, monitoring, and implementing system and network security practices and shall be responsible for system management including the maintenance of hardware and software inventory lists.

The Contractor shall be responsible for providing after hours, holiday, and weekend support for mission critical activities within the LHEA computing environment.

The Contractor shall be responsible for conforming to and supporting the implemention of directives from the GSFC Chief Information Officer including mandatory security issues, testing, email and system logging regulations.

66-002-A0 The Contractor shall reformat existing past mission data into current standard FITS format. Part of this work may require transferring data from VAX to UNIX platforms and the data may include calibration files, photon event files, light curves, images, and spacecraft housekeeping files.

The Contractor shall also create, correct and/or update database tables. The Contractor shall ensure that the Browse and W3Browse database tables are identical. Tables will be ingested into the HEASARC databases, and the Contractor shall also create documentation for those who perform database ingest within the HEASARC.

The Contractor shall develop and distribute new software and/or modify existing software to read the FITS format using the existing LHEA maintained FITSIO routines and the LHEA parameter XPI interfaces.

The Contractor shall maintain and distribute a mailing list of parties interested in HEASARC, ASCA, ROSAT, and RXTE documentation such as newsletters, journals, and CD-ROM's.

The Contractor shall support HEASARC presentations at conferences.

The Contractor shall provide support in the production of HEASARC CD-ROM's of archived mission data.

The Contractor shall maintain the Calibration Database (CALDB), including staging new calibration files, revising index files, distributing the database, and assisting users with installation and use.

The Contractor shall produce on-line documentation of the FITS data, the software produced, and contents of the database tables and shall ease the accessibility of old documents.

66-002-B0 The Contractor is responsible for the development, testing, maintenance and support of the HEASARC data analysis software. The Contractor shall also generate calibration files for the HEASARC supported missions and assist with software development for data processing, supporting pre-launch ground calibration and instrument testing.

The Contractor shall provide ftools help, xanprob, and other similar email help facilities to the users of HEASARC data analysis software.

The Contract shall prepare documentation related to the installation and use of HEASARC data analysis software at each release and up-to-date information will be maintained on HEASARC Web pages between releases.

The Contractor shall maintain a version control repository for HEASARC data analysis software.

The Contractor shall install regular development builds of the software for in-house use by scientists and their staff and provide software development and support for mission operations, mission data analysis and mission calibration.

The Contractor shall assist new missions in integrating their own software into the HEASARC packages and shall assist with production of data file format specifications for HEASARC related missions.

The Contractor shall also perform developer level system administration on HEASARC computers.

66-002-C0 The Contractor shall provide direct science and technical support for

visiting and remote Guest Observers (GO's) and peer reviews that approve grants. The Contractor may also be required to generate Web pages, CD-ROM's and other promotional material for the world-wide scientific community.

66-002-J0 The Contractor shall provide programming, analysis, and science support for the HEASARC's participation in external data center teams such as INTEGRAL and XMM, as well as observing support for ASCA. Specific support includes 1) onset support at external data centers; 2) design, population and maintenance of data archives for supported missions; 3) creation of duplicate mission archives at the HEASARC; 4) participation in system and analysis software development; 5) participation in the overall design and development of the data centers for supported missions; 6) interface requirements between HEASARC and the external data centers; 7) representation of the HEASARC at external data center meetings; and 8) support for ASCA mission operations at the Institute for Space and Astronomical Science in Tokyo, Japan.

66-002-N0 The Contractor shall develop and enhance the Sky View web applications, performing data management functions such as installing large data sets to include in the SkyView web applications and creating new scripts to check system status.

66-002-P0 The Contractor shall provide support to the Guest Observer Facility (GOF) by maintaining the RXTE GOF Web site, responding to email questions from guest observers, quality checking of RXTE data processing, populating the RXTE archive, and maintaining and improving RXTE data analysis ftools.

66-004-A0 The Contractor shall provide support for XTE satellite operations in scheduling observations and assisting in the experiment monitoring of real time science data and software development by 1) developing and maintaining the 8 software subsystems in the SOF; 2) coordinating software efforts at the SOC level; and 3) performing system administration.

The development of new software is controlled by the government through a Configuration Control Board (CCB). The Contractor shall participate in the CCB process.

The Contractor is responsible for delivery of daily command files to the XTE Mission Operations Center.

66-005-D0 The Contractor shall be responsible for the development of software to aid in the design, calibration, testing, and analysis of flight data for the transient gamma-ray spectrometer experiment and the European Space Agency (ESA) International Gamma-Ray Astrophysic Laboratory (INTEGRAL) Experiment Spectrometer (SPI).

66-005-E0 The Contractor shall be responsible for programs developing analysis software that will have documentation and in-line explanation. The Contractor shall also

support post-launch activity, using existing software to extract required burst and background data from KONUS Level-Zero files.

66-005-G0 The Contractor shall support the day-to-day operation of the GCN system. Support includes programming and maintenance to correct deficiencies and enhance performance.

66-011-00 The Contractor shall fabricate, test, and modify electronics instrumentation designed to support scientists and engineers engaged in the study of the primary cosmic radiation, x-ray and gamma ray astronomy in LHEA. Certification is required in surface mount assembly, hand soldering, microscope soldering, polymerics, harnessing, and quality assurance.

66-014-00 The Contractor shall provide electric and systems-level support in the preventive maintenance of the GRIS instrument, and support instrument-level tests and trouble-shooting for maintaining a continual flight ready status. The Contractor shall support field operations during pre-launch, flight and recovery in both the Northern and Southern Hemisphere. The Contractor shall provide materials and services on field operations in support of the GRIS instrument. The Contractor shall also provide subsystem assembly and electrical support in the fabrication and testing CZT detector modules for InFOCus program and support of GSFC detector developing in producing CZT material for the InFOCus balloon-borne instrument.

Software support to be provided includes the generation and update of high-level and low-level design documents, user manual and developmental test software.

The Contractor shall support the installation and maintenance of the InFOCus team members' workstations, networks and applications software. Coordination with the ODIN vendor may be required.

66-021-00 The Contractor shall modify and extend the Glastsim software to evaluate different configurations for the GLAST calorimeter and the ACD. The Contractor will conduct studies of the data system for GLAST, and specifically, estimating the on-board processing requirements, the definition of data packets for transmission to the ground, and the organization of the science data system on the ground.

The Contractor shall develop astronomical performance simulations that will support the evaluation of the proposed GLAST instrument technologies relative to each other and relative to the science requirements of the mission.

66-023-00 The Contractor shall provide modeling and data analysis support for the X-ray variability phenomena observed by the Rossi X-Ray Timing Explorer (RXTE) and assist in the understanding of the mechanisms underlying these observations that reflect on the properties of compact binaries including their equations of state and surrounding strong gravitational fields. Results shall be provided.

**(Laboratory for Astronomy and Solar Physics) The support includes the implementation of space research in the fields of UV/optical astronomy, infrared/submillimeter/radio astronomy, and solar physics; support of basic research through observational and theoretical studies; support of conception and implementation of innovative technology and space-borne instrumentation; providing experimental, scientific, operational, and archival technical analysis to NASA flight programs; supporting the scientific community in these discipline areas to enable effective research with space flight instrumentation.**

68-018-00 The Contractor shall provide logistical support to non-government scientists who specifically support business-related solar physics activities.

68-019-00 The Contractor shall generate daily science and operations plans, and uplink daily instrument command loads. The Contractor is also required to maintain the ground system and software. Specific areas of support include monthly science operations, EIT Quicklook and Level Zero database management, data display software applications, and data anallysis tasks in the form of coronal temperature and density diagnostics, instrument calibration, and inter-spacecraft/instrument collaborations. Scientific and technical gatherings, journal papers, and presentations shall be supported.

68-020-00 The Contractor shall 1) archive and distribute solar data from SMM, GRO BATSE, YOHKOH, CORONAS and SOHO data, as well as ancillary data; 2) develop and maintain software for the reduction and analysis of the observational data handled by SDAC; 3) assist in using data and software; 4) write, organize, and distribute documentation relating too the characterization and use of data and software under the purview of the SDAC; 5) manage workstation, server, and network filer systems in the SDAC; and 6) provide research assistance support utilizing data from solar physics experiments.

68-032-00 The Contractor is responsible in the real-time operations (science operations and logistics) on SOHO scheduling of spacecraft interactive activities. Data management support for SUMER shall also be provided. Logistical assistance may be required. The Contractor shall also produce video, print, and Web products to disseminate SOHO information to the world.

68-035-00 The Contractor shall support EIT activities such as 1) expediting EIT data distribution in conformance with data use policy; 2) supporting thesis research activities; 3) conducting research on energy balance in coronal loops observed by EIT; 4) preparing training documents for the Space Weather Research at the Space Environment Center, NOAA, for use in interpreting transient coronal phenomena recorded by EIT; 5) identifying and studying the evolution of coronal features prior to the initiation of coronal transient phenomena such as weaves, filament eruptions, and flares; 6) research activities; and 7) attending scientific meetings to present EIT results and planning EIT observing programs.

**(Laboratory for Extraterrestrial Projects) This support is for the advancement of our understanding of the physics and chemistry of our solar system, of the geospace environment, and of the interplanetary and instellar medium, while providing technical analysis for conceiving, defining, and implementing NASA's space flight programs in Space Sciences.**

69-002-00 The Contractor shall provide software development, data processing, administrative, technical, and scientific support for the Unified Radio and Plasma Wave (URAP) instrument on the Ulysses spacecraft.

69-005-00 The Contractor shall provide support for an infrared array grating spectrometer development program involving optical design and measure data analysis during the design and construction phases of funded cryogenic IR spectrometers/cameras, and the design phase of future systems.

69-008-00 The Contractor shall provide software support in the development of the whole life cycle process of the SAM and CPU2 flight software and perform system administration functions on the development computers such as Sun workstations, supporting modifications and enhancements of that software. Development of prototype models able to simulate data and develop spectral analysis algorithms may be required as well as utilities to provide graphical displays for analysis of the data and theoretical models. The Contractor shall also verify the functionality of the SAM and CPU2 flight hardware and software. The Contractor shall provide for routine maintenance on the Sun Workstations, installing software when required.

69-012-00 The Contractor shall provide technical support, data processing and database maintenance, performing such responsibilities as 1) receiving deliverables across the Network and on CD-ROM's; 2) extracting orbit/attitude data; 3) producing 24 hour daily data plots; and 4) maintaining the system, including backup.

69-013-00 The Contractor shall support the flight electronics of the rocket and satellite borne electronics by providing electrical engineering for the development of flight electronics; software engineering support for the development of flight microprocessor electronics and the collection of data from the flight electronics; and engineering tech support for the assembly and testing of flight.

69-015-00 The Contractor shall develop, maintain, and enhance software for processing, displaying, and analyzing data from rocket and suborbital borne instrumentation, and other data as required. The Contractor shall also prepare papers for publication, presentations, and proposals, generating and distributing meeting results.

69-020-00 The Contractor shall provide 1) designs and drawings for spaceflight instruments, laboratory equipment, and rocket experiments; 2) request and track fabrication of parts for experiments; 3) coordination support of photography and graphic layouts of the technical data; 4) database maintenance of fabrication drawings; 5) design

and maintenance for the LEP Education and Outreach web site; and 6) design and maintenance of the LENA web site.

69-021-00 The Contractor shall be responsible for managing computer systems dedicated to Voyager MAG processing, providing programming and analysis support to resolve problems and to enhance performance of the systems. Maintenance and upgraded software used to extract MAG data from HDF files created may also be required. The Contractor may also be required to assist in the configuration of computer systems at the Bartol Research Institute where the ACE MAG data processing is performed.

69-025-00 The Contractor shall support 1) software development for data reduction, analysis and display, including image processing and statistical analysis; 2) spectral analysis of fields and Poynting flux, including spectrograms of electric and magnetic field power, phase and coherency, and the calculation of phase velocity; 3) calculation of electric field solutions for rockets; 4) web site maintenance for the GSFC laboratory and the Electric Field Instrument of the POLAR satellite; 5) stripping, migration, and archival of rocket data; 6) technical support to outside co-investigators; 7) requirements analysis for hardware acquisitions; 8) attendance at technical classes, seminars, meetings, and conferences; and 9) backup and routine maintenance on Sun SparcStations.

69-026-00 The Contractor shall conduct theoretical and numerical studies on the wave generation processes and the plasma instabilities that contribute to the field topological changes and spatial redistribution of plasmas in the magnetotail, building theoretical models that can describe substorm onsets.

The Contractor shall investigate the physical mechanisms that influence the dynamics of substorms, providing detailed numerical computations for the investigations.

69-027-00 The Contractor shall support LEP involvement in planetary missions like MGS, LPO, ISTP, and NEAR providing 1) processing, validation, analysis and visualization of data; 2) administrative and coordination support for the missions; 3) hardware and software support including fabrication and testing of flight instrument components; 4) maintenance of flight components and instrument databases, including reliability and quality assurance data; 5) assistance in testing and qualification of flight instruments; 6) programming support of the analysis of magnetometer and laboratory data; 7) education and public outreach, developing and maintaining web sites for planetary missions; 8) assistance in the organization of workshops and exhibits; 9) products such as images and videos; 10) logistical support for visiting scientists who collaborate on planetary missions.

69-029-00 The Contractor shall be responsible for MGS/TES programming and aerobraking support activities including 1) software design, development, implementation, testing, operation and support; 2) coordination of activities with ASU and JPL; 3) extended mission scientific programming; 4) atmospheric modeling support, including creating synthetic TES data; 5) system administration and user support; 6)

TES database design, maintenance and administration in coordination with ASU; 7) routine data processing; and 8) setup and maintenance of web pages.

69-030-00 The Contractor shall support educational and outreach efforts for NEAR-XGRS, PIDDP, and MS01, serving as host/mentor to teachers and students involved in GSFC-sponsored educational programs, developing lesson plans, educational web sites, and other materials. Other responsibilities include 1) participation in educational events; 2) creating and editing materials designed to promote and explain mission science and distributing these materials; 3) planning of scientific conferences and workshops; 4) serving on organizing committees; 5) logistical support; 6) and technical writing and editing for conference proceedings, journal articles, books, and other outreach documents.

The Contractor shall also be responsible for monitoring the processing of grant awards for researchers funded under NASA OSS planetary programs, and serve as a communication link between the OSS program managers, funded researchers, and funding officials.

69-038-00 Provide software development, data library, and data presentation support for the processing and analysis of ionospheric data from top-side sounding instruments on-board ISIS 1, ISIS 2 (International Satellites for Ionospheric Studies) and Alouette-2 satellites, from RPI on IMAGE, and from related sounding rockets and various ground-based observatories.

69-040-00 The Contractor shall coordinate science activities of the ISTP and collaborating missions, including coordination with other spacecraft, ground-based observatories and theory centers worldwide, and the development of conflict-free pointing plans for the POLAR despun platform . The Contractor shall also develop, implement and maintain mission planning software and tools, and conduct routine review of ISTP key parameters, orbit and attitude, and other data for selection of candidate events and as a data quality control measure. The Contractor shall develop and maintain data visualization and analysis tools, including the Key Parameter Visualization Tool as well as administer and maintain the ISTP World Wide Web server. The Contractor shall also provide for planning and organization of science workshops as well as planning and implementation of ISTP education and outreach efforts. Support in research activities related to ISTP missions and their science objectives is also required, including completion of studies needed for presentation of project information or research results at national and international science conferences, and publication in peer-reviewed scientific journals.

69-041-00 The Contractor shall provide programming, analysis, and science support necessary to acquire, process, store, retrieve, and display WAVES data. Scientific support includes the analysis of Type II and III bursts, and other solar radio phenomena. Studies in understanding space weather may also be required. Specific support includes 1) routine acquisition of data from the ISTP CDHF, its processing for daily summary plots, and its storage and backup; 2) quality control of data products; 3) development of

tools for analysis of data graphically and mathematically and maintenance of databases and ancillary software that supports analysis; 4) maintenance of on-line documentation of WAVES products and software; 5) preparation of talks and papers on studies of radio phenomena in the WAVES data for presentation and for publication in peer-reviewed journals; 6) cross-platform studies; and 7) maintenance of software including daily summary plot of software and WINDLIB routines.

69-044-00 The Contractor shall perform theoretical, analytical and numerical analysis in support of projects in the area of space plasma theory and modeling. A comparison of theory and modeling results to satellite measurements is required for presentation of results at international conferences and in peer-reviewed journals.

69-046-00 The Contractor shall perform 1) operating systems upgrades; 2) installation of software and hardware; 3) monitoring and tune system performance; 4) installation of security patches and tools; 5) monitoring security status and response to break-in attempts; 6) installation, upgrading, and maintenance of network components; 7) monitoring of network performance; 8) diagnosis and repair of network problems, 9) maintenance of public printers; and 10) assistance to users. Coordination with the ODIN vendor may be required.

69-047-00 The Contractor shall operate the production and special request processing for magnetometer data from the IMP-8 and WIND satellites, supporting the analysis of magnetic field observations from IMP-8 and WIND and collaborating missions under the ISTP program. These analysis may involve numerical, analytical and theoretical studies of interplanetary and magnetospheric phenomena. The Contractor shall also provide support in the 1) studies of the foreshock region, interplanetary shocks, and planetary bow shocks; 2) studies of magnetic clouds; 3) publication of results in scientific journals; 4) enhancement of existing analysis programs; 5) continuation of work on the star tracker for the WIND spacecraft; 6) enhancements to the general analysis program; 7) routine and special request processing of magnetometer data from IMP-8 and WIND; 8) distribution of magnetic field data in response to data requests from investigators worldwide; 9) development and maintenance of web pages for the WIND/MFI and IMP-8/MAG investigations; 10) generation of art work for scientific and outreach programs; 11) administrative assistance that includes record keeping, document preparation, scheduling and organizing scientific meetings, and logistical support; and 12) logistical support for visiting scientists who collaborate with LEP.

69-051-00 The Contractor shall provide equipment tracking support for the LEP that includes 1) listing of equipment for a specific user on request; 2) excess equipment processing; 3) tracking of items in storage; 4) tracking of property passes and status notification; 5) tracking of new equipment users; and 6) assistance in repair requests.

69-055-00 The Contractor shall provide scientific, technical and software support for the Composite Infrared Spectrometer (CIRS) on board the Cassini.

The Contractor shall maintain production and test facilities for the CIRS focal plane 1 (FP1) thermoelectric detectors and absorbers for the analysis of in-flight test data, developing software application to analyze Solid State Recorder (SSR) data and verify the correctness CIRS flight software on the SSR. The Contractor shall also develop software application to analyze CIRS science-engineering telemetry data.

The Contractor shall enhance housekeeping Graphical User Interface (GUI) software applications to analyze CIRS housekeeping telemetry data in real time.

The Contractor shall develop GUI software applications to create comment sequence tables.

69-057-00 The Contractor shall support the REE/Solar Terrestrial Probe (STP) by 1) analyzing hardware and software needs associated with onboard data analysis; 2) producing and supporting model applications to run on the REE Flight Computer Testbed; 3) providing technical expertise in Solar Terrestrial data analysis; 4) performing basic research needed to implement space-based onboard data analysis; and 5) maintaining the REE/STP web site.

69-059-00 The Contractor shall provide software and data reduction support for the study of heliospheric structures including design development and support of analysis and display software; assistance for maintenance of existing software; and data processing support in computer-related tasks.

69-061-00 The Contractor shall provide programming support for developing radiative transfer models for planetary atmospheres and for analysis of planetary data, including MGS/TES data.

69-063-00 Provide programming support, including requirements analysis, design, implementation, test, and maintenance for software to support the development and eventual deployment of the Stereo/WAVES experiment on board the STEREO mission.

69-064-00 The objective of this work activity is to develop, support and maintain data reduction analysis software for studies of solar wind and solar and plasma physics using data from the Triana, WIND and IMP 8 spacecraft. It will also include software development for pre-launch ground calibration and instrument testing for Triana. Data analysis will be carried out in support of science research projects. In addition, the activity will provide and maintain all relevant documentation including web pages.

**The Contractor shall support the Systems, Technology, and Advanced Concepts (STAAC) Directorate.**

**(Mission Integration and Planning Division) This support includes enabling science discovery by providing end-to-end systems engineering technical analysis for the**

**development of science mission systems and instruments, advanced concepts, and technology. The NASA Enterprises, scientific community, industry, academia, and other government agencies are served by partnering to deliver innovative and cost effective solutions and concepts that maximize scientific return, advance technology, and provide opportunities for increased education and economic growth.**

74-002-00 The Contractor shall 1) fabricate and assemble detectors and Detector Modules (DM) and execute experiments for evaluation of Swift/BAT detector module materials and processes; 2) executive environmental tests to validate low noise performance and mechanical designs for detector system elements; 3) develop software for the test stations during the DM and Block Controller (BC) development phase, and for the testing of the XA1 ASICs, the assembled DMs, and the assembled BCs during the mass production phase (once the design phase is over); and 4) provide documentation and organizational support to the Swift Project.

**The Contractor shall support the Earth Sciences Directorate. Support will aid the expansion of scientific knowledge of the Earth system using NASA's unique capabilities from the vantage points of space, aircraft, and in situ platforms to understand the causes and consequences of land-cover/land-use change; support prediction of seasonal-to-internannual climate variations; identificaiton of natural hazards, processes, and mitigation strategies; detection of long-term climate change, causes, and impacts; and assist the understanding of the causes of variation in atmospheric ozone concentration and distribution; help to disseminate information about the Earth system and implement open, distributed, and responsive data system architectures; for the increase of public understanding of Earth System Science through education and outreach.**

90-002-00 The Contractor shall publish a newsletter, write, design, edit, and publish brochures, booklets, fact sheets, fact books, posters, and other materials for both formal and informal education of the scientific community and the public at large, and maintain a Web site that disburses the information to all of these. Design displays and outreach for ESE/EOS at scientific, educational, and non-traditional conferences to reach scientists, educators, and the general public is also required.

90-008-00 The Contractor shall provide technical resources necessary to support activities such as the 1) maintenance of MODIS Joint Atmospheres product (MOD08) software; 2) development, engineering, and maintenance of various World Wide Web sites related to Earth Science activities; and 3) participation in workshops and retreats.

90-012-00 The Contractor shall update existing software from ISLSCP-I CD-ROM effort; review the proposed data sets; develop processing plans and then process data; work with investigators and other agencies to develop products; create a WWW site; and participate in meetings and workshops.

**(Global Change Data Center) This support provides the technical analysis to develop and operate data systems, generate science products, and provide archival and distribution services for earth**

**science data in support of the U.S. Global Change Program and the Earth Sciences Program. The ultimate product of these activities is access to data to support research, education, and public policy.**

90-003-F0 The Contractor shall support the operation of Data Support Teams (DST's) and other data support elements needed to fully support, from inception to operational distribution to users, the Earth Science data sets at the GSFC DAAC.

90-003-G0 The Contractor shall provide operations support to all data processing systems for ingest, archive, data processing, and distribution of all data received by the GSFC DAAC, outside of the ECS system. The Contractor shall provide analytical support for evaluating all data processing activities; analysis, trouble shooting, and resolution or referral of all problems encountered within the operational environment; and support for off-line request processing and maintaining inventory of off-line data sets. The Contractor shall also perform all mail and inventory functions necessary to support the distribution of GSFC DAAC commodities and shall perform requirement definition for any new or modified capabilities required in the operations environment. The Contractor shall provide operations testing for any current or new systems for the operations environment.

90-003-H0 The Contractor shall support software engineering and development activities for the operational systems of the GSFC DAAC, including DAAC-unique extensions to the EOSDIS ECS, including enhancements to existing operational software on both the Version 0 and TRMM support systems.

90-004-00 The Contractor shall compile, analyze, and disseminate information concerning science data processing requirements for EOSDIS.

90-005-00 The Contractor shall provide support for the Global Change Master Directory (GCMD) Earth science data, identify data to be included and coordinate with other internal and external data systems.

**(Laboratory for Atmospheres) This support will aid advancing knowledge and understanding of the atmospheres of the Earth and other planets. It includes computational aspects of a broad theoretical and experimental research program studying all aspects of the atmospheres of the Earth and other planets, including their structural, dynamical, radiative, and chemical properties.**

91-002-00 The Contractor shall provide scientific, systems programming, mechanical design, engineering, and documentation support for the Cassini/Huygens Gas Chromatograph Mass Spectrometer (GCMS), the Cassini Ion and Neutral Mass Spectrometer (INMS), and the CHARGE and CONTOUR mass spectrometers.

The Contractor shall develop software for interfacing laboratory test equipment to gas chromatographs and mass spectrometers and for data analysis and interpretation of complex mass spectra to include data visualization and analysis tools. The Contractor shall perform detailed laboratory studies and computer modeling of ion optics and magnetic field systems in support of flight instrument development.

The Contractor shall provide mechanical engineering Computer Aided Design (CAD) support for laboratory and flight mass spectrometer instruments.

The Contractor shall provide scientific and engineering support for the design and development of calibration systems to be used for flight mass spectrometer calibrations.

The Contractor shall provide systems engineering for the design and development and support of laboratory control systems for flight mass spectrometers.

The Contractor shall provide documentation support including graphics software, word processing and inventory control systems for flight parts. The Contractor shall also develop diagrams, images, and other graphical and multimedia products to support instrument development efforts.

The Contractor will support travel requirements including launch support, conferences, and training related to all of these activities.

91-017-00 The Contractor shall support Cassini, Planet-B, CHARGE, and CONTOUR mass spectrometer instrument development, including 1) design, fabrication, and assembly for the CHARGE and CONTOUR mass spectrometer components and subsystems; 2) design, engineering, fabrication, and assembly support for laboratory activities; 3) functional testing and evaluation of the operation of the CHARGE and CONTOUR mass spectrometers and associated systems and subsystems; 4) providing electro-mechanical repair services; 5) providing Computer Aided Design (CAD) mechanical design support for the CHARGE and CONTOUR mass spectrometers; 6) associated travel; 7) providing post-launch support for continuing GCMS, INMS, and Planet-B characterization, calibration, testing, and other activities on the engineering unit instruments; 8) support for continuing in-flight testing of the GCMS, INMS, and Planet-B instruments by analyzing, interpreting, and results reporting; and 9) maintenance and modification of web pages.

91-030-00 The Contractor shall provide technical and programming support in areas such as theoretical analysis, experimental analysis, and software development, oriented toward the analysis of atmospheric backscattered ultraviolet (buv) data, instrument calibration, and the scientific validation and analysis of quantities that can be obtained from the buv observations.

91-031-A0 The Contractor shall support 1) calibration efforts UV instrumentation used for space observations of buv radiation; 2) implementation of the results of pre-flight ground based calibrations with in-flight calibrations of the TOMS to produce accurate values of radiances and irradiances over the life of the instruments, reporting results and any anomalies in the operation of the instruments, and correction plans; 3) development and maintenance of algorithms designed to convert engineering unit quantities into measured radiances and irradiances and into other scientific valid data

products; and 4) analysis and validation of science data products in support of research conducted, providing any analysis programs developed.

91-031-B0 The Contractor shall investigate multispectral and hyperspectral backscatter data from GOME and OSIRIS as they become available, to be used to develop improved retrieval algorithms based on measured backscatter intensities.

91-032-00 The Contractor shall provide support for the preparation of GSFC participation in the flight of the OMI instrument on the EOS-Chemistry mission, including 1) the development of a plan identifying the tasks involved in producing OMI data; 2) assessing the OMI hardware design and providing analysis of the interplay of the sensor and algorithm designs; 3) assisting KNMI's preparations for CDR and other reviews; 4) attending NASA, ECS, and OMI reviews, including analyzing plans and design review packages, providing support and recommendations related to the development and implementation of the sensor, processing algorithms, and data systems; 5) and providing progress and final reporting.

91-034-00 The Contractor shall provide technical and programming support, including performing sensitivity and error analyses; supporting the development of radiative transfer tables, and developing and testing algorithms.

91-037-00 The Contractor shall participate in and analyze laboratory and inflight calibration of QuikTOMS to produce accurate values of radiances and irradiances over the life of the instruments. In addition, the Contractor shall provide for the planning and development for data reception from the ground receiving station as well as level-0 software development (data reception); develop command lists for operation of the TOMS instrument on board the QuikTOMS spacecraft (command lists); and monitor the health of the QuikTOMS instrument, maintaining the historical record of instrument housekeeping data (heath and safety). The Contractor shall develop and maintain software designed to convert engineering unit quantities into measured radiances and irradiances and into other scientific valid data products.

**(Laboratory for Terrestrial Physics) This support helps advance NASA programs by increasing knowledge of the Earth's land surface and interior, as well as that of its planetary neighbors. It helps answer such broad-ranging and fundamental questions as: the distribution of masses within the Earth-ocean atmosphere system; explain the origin of the Earth's magnetic field; the composition and structure of the Earth's mantle; using space geodetic techniques, what is the detailed, realtime movement of the Earth's tectonic plates; how do volcanic eruptions affect Earth's climate; how is the Earth's rate of rotation changed by changes in the momentum of the atmosphere and hydrosphere or by snowfall; what is the role of vegetation in the carbon cycle; what are the most efficient datasets required to detect and interpret changes at the ecosystem level; and what is the interior structure of the Moon, Mars, and Venus?**

92-001-F0 The Contractor shall provide technical support for AERONET, including 1) calibration of reference radiometers and intercalibration of field radiometers; 2) data quality checking and review of instrument performance of globally distributed

instruments; 3) resolution of instrument and/or transmitter problems; 4) deployment of instrumentation at globally distributed sites; 5) attendance at scientific conferences, project meetings, field campaigns, and other related projects; 6) scientific analysis of data sets of spectral aerosol optical depth, water vapor, aerosol size distributions, and spectral irradiance data; and 7) completion of scientific investigator requests for data.

92-001-G0 The Contractor shall provide technical support LANDSAT, including 1) processing ETM+ data with the Image Assessment System (IAS) and in-house code software; 2) verification that ETM+ meets all radiometric and geometric specifications; 3) performance trending analysis of prelaunch and on-orbit data received; 4) calculations of ETM+ calibration coefficients; 5) maintenance of World Wide Web sites, documenting all processing results; 6) archiving ETM+ data received; and 7) reporting findings to the scientific community.

92-001-J0 The Contractor shall support BOREAS activities, including 1) oversight of the computer systems and operations activities required to maximize information retention and ensure consistent data delivery; 2) development, testing, and operational use of software to read, process, inventory, and create output products from existing image and point source data; 3) implementation and maintenance of a relational data base to inventory, tracking, manipulating, and extracting data for CD-ROM production and distribution; 4) providing science team users with information and on-line data; 5) processing of documentation for publication; 6) interactions with the ORNL DAAC regarding the documentation and long-term archive of the data; and 7) obtaining, organizing, and documenting data sets for Guest Investigator groups.

92-001-L0 The Contractor shall support LBA-Ecology activities, including 1) oversight of data and information system (DIS) activities; 2) working WG efforts, identifying DIS requirements, and coordinating initiatives to maintain interoperability; 3) support to science and DIS workshops; 4) data processing; 5) development of DIS elements of the LBA-Ecology Experiment Plan; 6) development of software tools; 7) management of FGDC CCAP grant activities; 8) development and enhancement of PDB and STDB interfaces; 9) preparation and presentation of DIS activities at workshops and meetings; 10) development and coordination of ESIP/FGDC technology test bed and with overall LBA-Ecology DIS requirements; 10) identification of existing and planned data products and services; 11) World Wide Web site configuration, enhancement, and content production; 12) assistance with property management; and 13) hydrology science component support.

92-001-P0 SFARI 2000 is an international science initiative in southern Africa that explores linkages between land and atmospheric processes, with particular emphasis on gas and aerosol emissions from various sources and the consequences of their deposition on biogeophysical and biogeochemical systems of the region. Support for SAFARI 2000 includes information gathering, CDROM development and planning.

**(Earth and Science Data Computing) This support enables NASA scientists to increase their understanding of the Earth, solar system, and universe through computational modeling and the processing of spaceborne observations by providing access to state-of-the-art high-performance computing and networking, mass storage and information systems technologies, and dedicated computational science technical analysis. It enables the productive use of Earth and Space science and technology and extending the use of Earth Science research to national, state, and local applications through the support of a robust commercial remote sensing industry.**

66-003-A0 The Contractor shall perform 1) software maintenance and enhancement, including the Voyager "Cosmic Ray Subsystem" Web site; 2) scientific analysis, including plots, data sets and data listing, special requests for data, software for specialized calculations, and documentation; 3) database production and maintenance for the Voyager project; and 4) configuration management and archival support.

93-003-00 The Contractor shall provide technical services to Earth and Science Data Computing, including writing, editing, graphics, brochure development, and library services. The Contractor shall also provide property administration, recommending acquisitions of up-to-date software for the equipment.

93-005-00 The Contractor shall provide visualization expertise and production support to the research community of the NASA Earth Science Enterprise.

93-006-00 The Contractor shall integrate advanced sets of software and hardware for the NCCS and HPCC programs that will provide new visualization capabilities to complement the scientific research work.

93-016-00 The Contractor shall support publication outreach efforts for HPCC, including 1) writing articles for newsletters, national magazines, and World Wide Web publications; 2) production compilation videotapes and slide sets; 3) curating, designing and editing ESS web pages; 4) collaborating on papers for conferences and journals; 5) co-authoring articles with science teachers for education publications; 6) preparing promotional material; 7) editing; 8) developing ESS news releases; 9) facilitating media interviews for ESS; 10) preparing communication including speeches; 11) presenting reports and visualizations; 12) and general support to public information efforts.

93-017-B0 The Contractor shall provide for web page development to full program support, including development and maintenance of the Education Mall (EdMall) web site. The Contractor shall also provide computer support for workshops and seminars hosted by the Education Department as well as technical support for the Goddard Earth System Science Education Project (GESSEP).

The Contractor shall maintain the computer lab located at the GSFC, Building 16, providing training and workshops.

93-020-00 The Contractor shall provide support to GLOBE, including 1) continual development of the GLOBE 2.5 visualization system; 2) maintenance of GLOBE 2.5

after release; 3) assistance to other GLOBE servers to upgrade to GLOBE 2.5; 4) continual maintenance of the GLOBE 2.0 system until all mirror sites upgrade to 2.5; 5) revalidation of GLOBE 2.0 and 2.5 as new data is submitted; 6) ingest GLOBE 2.0 and 2.5 reference datasets; 7) visualization of new student datasets; 8) moving towards the GLOBE integrated server concept; 9) assisting other GLOBE servers in validation and maintenance of student database; and 10) moving towards upgraded applications such as Oracle 8 and IDL 5.2.

93-026-00 The Contractor shall provide short computer animations of science concepts, data, instruments, and satellites as source material for the education and general public communities.

93-029-00 The Contractor shall develop a portable version of the PARAMESH with Message Passing Interface (MPI) to allow the use of the code in various platforms including the Cray J-90, T3E, BEOWULF, and SGI Origin 2000 platforms. In addition, the Contractor shall participate in the future design of PARAMESH, debugging and developing graphical user interface, providing user support, and updating the HTML-based user manual.

**(Laboratory for Hydrospheric Processes) This supports a broad range of programs dealing with theoretical and experimental research in the oceanic, cryospheric and hydrologic sciences. It provides comprehensive supporting technical analysis which constitutes an end-to-end capability involving instrument, algorithm, and model development; the validation and analysis of remotely sensed data from a wide variety of sensors with in situ hydrological data, and ultimately, the application of these data to geophysical process studies and global change investigations.**

97-005-00 The Contractor shall provide reduction and analysis of ESTAR data, including the development of appropriate software. The Contractor shall also produce finished images and other required data products from raw ESTAR data. The Contractor shall also analyze calibration and other ESTAR data to develop corrections and refinements to products.

97-006-00 The Contractor shall evaluate methods for using a spaceborne radar to measure rain intensities, including three TRMM/PR processing algorithms: 2A-21, 3A-25, and 3A-26.

The Contractor may be required to assist in the implementation and testing of improved code as well as developing, refining, and operating software for display and analysis of PR products. The Contractor shall participate in validation of PR and in science campaigns of ground-based experiments.

97-008-00 The Contractor shall provide expertise for Sea-Ice and Climate studies and data investigations.

97-009-00 The Contractor shall provide the programming support required to investigate the physical and radiative characteristics of sea ice.

97-010-00 The Contractor shall support the development and validation of sea ice algorithms for the EOS-PM Advanced Microwave Satellite Radiometers (AMSR) as well as support research designed to better understand the relationship among the earth's climate system components: the ocean, the cryosphere and the atmosphere on seasonal, interannual, and decadal time scales.

97-019-00 The Contractor shall provide analysis expertise for the Moderate Resolution Imaging Spectrometer (MODIS), algorithms for snow and sea ice.

97-028-00 The Contractor shall support collecting and analyzing microwave radiometer data from spaceborne, airborne, and ground systems (e.g., DMSP SSM/I, ASAS, NS001, AMMR, AMMS, PHMR, etc.) and visible and infrared sensors (AVHRR, MODIS, ASAS, NS001, etc.). The Contractor shall provide the required software for data acquisition, editing, calibration, assimilation, and display for airborne and spaceborne radiometer data to develop the necessary analysis programs for analyzing the atmosphere, snow, soil moisture, sea ice and ocean parameters. The CCRP/GPCP, BOREAS, TRMM and WetNet projects are a part of the effort.

| | NASA NUM | DESCRIPTION | NAME | SERIAL | Value | LOC | END-USER | ATR | Trans to SSAI | Trans to GST |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | VA Linux | VA Linux 22' Monitor | 0414792ZA | $0.00 | GRBLT/344 | A. Flieg | J. Herman | x | |
| 2 | | VA Linux | VA Linux Pentium III | SX0823000792 | $7,009.46 | GRBLT/344 | A. Flieg | J. Herman | x | |
| 3 | | VA Linux | VA Linux 22' Monitor | 0415122ZA | $0.00 | GRBLT/342 | D. Ilg | J. Herman | x | |
| 4 | | VA Linux | VA Linux Pentium III | SX0823000786 | $7,009.46 | GRBLT/342 | D. Ilg | J. Herman | x | |
| 5 | | Sony | Sony Vaio Laptop | 283085303113460 | $2,875.00 | GRBLT/342 | D. Ilg | J. Herman | x | |
| 6 | | Sony | Sony DVD-Rom | 289973303107645 | | GRBLT/342 | D. Ilg | J. Herman | x | |
| 7 | | VA Linux | VA Linux 22' Monitor | 0414743ZA | $0.00 | GRBLT/338 | OMI Guest Office | J. Herman | x | |
| 8 | | VA Linux | VA Linux Pentium III | SX0823000772 | $7,009.46 | GRBLT/338 | OMI Guest Office | J. Herman | x | |
| 9 | | VA Linux | VA Linux 22' Monitor | 0415129ZA | $0.00 | GRBLT/333 | OMI Guest Office | J. Herman | x | |
| 10 | | VA Linux | VA Linux Pentium III | SX0823000773 | $7,009.46 | GRBLT/333 | OMI Guest Office | J. Herman | x | |
| 11 | | VA Linux | VA Linux 22' Monitor | 0415127ZA | $0.00 | GRBLT/333 | OMI Guest Office | J. Herman | x | |
| 12 | | VA Linux | VA Linux Pentium III | SX0823000761 | $7,009.46 | GRBLT/333 | OMI Guest Office | J. Herman | x | |
| 13 | | VA Linux | VA Linux 22' Monitor | 0414819ZA | $0.00 | GRBLT/333 | OMI Guest Office | J. Herman | x | |
| 14 | | VA Linux | VA Linux Pentium III | SX0823000790 | $7,009.46 | GRBLT/333 | OMI Guest Office | J. Herman | x | |
| 15 | | VA Linux | VA Linux 22' Monitor | 01414773ZA | $0.00 | GRBLT/327 | Vassilov | J. Herman | x | |
| 16 | | VA Linux | VA Linux Pentium III | SX0823000791 | $7,009.46 | GRBLT/327 | Vassilov | J. Herman | x | |
| 17 | | Seagate | SEAGATE 50.1GB EXTERNAL | 00055L6290 | $1,002.00 | 4500/415 | C. Seftor | | x | |
| 18 | | HP | HP SURESTORE DAT40 | GB30035716 | $1,237.00 | 4500/415 | C Seftor | | x | |
| 19 | 1333825 | HP | PRINTER | JPBF0454585 | $2,029.00 | 4500/447 | H. Chang | Yun-Chi Lu | | x |
| 20 | 1950289 | ZZYZX | ZZYZX 25 GB DRIVE | 980716318532 | $1,800.00 | 4500/444 | R. Gersten | Joey Comiso | x | |
| 21 | 1818058 | Ci Design | Ci Design 9 GB Disc Drive | 415761 | $1,800.00 | 4500/444 | R. Gersten | Joey Comiso | x | |
| 22 | 2039332 | SGI | SGI External SCSI Drive | 015B306302 | $548.55 | 4500/444 | R. Gersten | Joey Comiso | x | |
| 23 | 2039425 | SGI | SGI 21" Monitor | 2408514 | $1,000.00 | 4500/444 | R. Gersten | Joey Comiso | x | |
| 24 | 2039331 | SGI | SGI 300 MHZ Computer System | 080069134F15 | $15,484.50 | 4500/444 | R. Gersten | Joey Comiso | x | |
| 25 | 1751940 | ZZYZX | ZZYZX 9GB DRIVE | 9620169115 | $1,000.00 | 4500/444 | R. Gersten | Joey Comiso | x | |
| 26 | | SGI | 20" MONITOR | 2083786 | $3,250.00 | 4500/415 | Hyo-Duck Chang | | x | |
| 27 | | SGI | OCTANE/SI R10000 | 0800690BC65 | $18,522.00 | 4500/415 | Hyo-Duck Chang | | x | |
| 28 | 1338872 | Apple | 20"DISPLAY | 050838 | $1,617.00 | 4500/351 | L. Bodden | | x | |
| 29 | 1338871 | Apple | MACINTOSH IIVX | F13242N63BF | $1,850.00 | 4500/351 | L. Bodden | | x | |
| 30 | 1335122 | Sun Microsystem | DISK DRIVE | 324U0453 | $2,925.00 | 4500/337 | Server Room | | | x |
| 31 | 1335120 | Sun Microsystem | DISK DRIVE | 324UO4740 | $1,200.00 | 4500/337 | Server Room | | | x |
| 32 | 1335121 | Sun Microsystem | DISK DRIVE | 324U5335 | $1,538.00 | 4500/337 | Server Room | | | x |
| 33 | 1335119 | Sun Microsystem | MONITOR | 00109689415FC1615 | $2,699.00 | 4500/337 | Server Room | | | x |
| 34 | | SGI | 19" MONITOR | 2425979 | $1,000.00 | 4500/337 | Server Room | | | x |
| 35 | 1342040 | SGI | 50MHZ GRAPHICS C | 0806907FFED | $25,906.00 | 4500/337 | Server Room | | | x |
| 36 | 1335117 | Sun Microsystem | SUN SPARCSTATION | 324F2815 | $22,609.00 | 4500/337 | Server Room | | | x |

# ATTACHMENT D
## List of Contractor Access to Government Controlled Property
## January 18, 2000

The Contractor shall have access to "shared" property in performance of work under this contract. The term "shared" means government controlled property that is located at the Goddard Space Flight Center and available to the Contractor and other parties, on a no-cost basis. It is property for which the Contractor may use when available. Other parties include civil servants, other contractors, visiting scientists, and the general public, for example, through access of WEB servers.

In general, this equipment is an evolving set of hardware and software in GSFC computer facilities that are required by differing groups to perform support. Representative equipment is provided below.

## REPRESENTATIVE EQUIPMENT

The software used under this contract will be the type necessary for optimal operation and to retain Goddard's leading edge research capability on the following sample of typical equipment. Modifications, additions, or deletions to these systems shall be effected, during the performance period of this contract, as new technology and new systems may dictate.

| Vendor | Equipment |
|---|---|
| Sun | Electronic CAD Workstation Software Development Workstation Large Scale Data Management Server |
| HP | Mechanical CAD Workstation GIS Workstation |
| IBM | Network Data Server |
| SGI | 3D Graphics Workstation Compute Server Cray systems J90, T3E, T90 |
| Compaq | General Purpose Workstation Intel based UNX Workstation |
| Digital | General Purpose Workstation |
| UNISYS | General Purpose Workstation Networking Equipment Intel based system and network equipment |
| GTSI | Supporting Equipment Administrative File Server X term printer, etc. |
| Sylvest | Storage Devices tape and disk storage robotics |

**ATTACHMENT D**
**List of Contractor Access to Government Controlled Property**
**January 18, 2000**

**REPRESENTATIVE EQUIPMENT (CONTINUED)**

| | |
|---|---|
| ECS | 3rd Party Software |
| Dynatech | 3rd Party Maintenance/Integration/Installation |

## Table of Contents

## 1.0 Introduction

The purpose of the Health and Safety Plan is to define management responsibility; establish procedures and training requirements; and list reporting requirements for the administration of an effective Health and Safety Program for SSAI projects at the Goddard Space Flight Center (GSFC). The objective of the Health and Safety Program is to provide safe and healthful working conditions and to ensure a continuing hazard and accident prevention effort to protect personnel, equipment and facilities. It is SSAI policy to adhere to all federal, state, and local laws and regulations, codes and standards in order to develop safe practices and procedures. SSAI will observe both the letter and the spirit of these laws not only to meet its legal obligations, but also out of a sense of concern for the welfare of its employees and co-workers in SSAI facilities. The requirements of this plan are applicable to all SSAI employees assigned to GSFC projects.

### 1.1 Basic Description of Work

The purpose of this contract is to provide support to Code 916, Atmospheric Chemistry and Dynamics Branch and the Earth Sciences Data and Information System (ESDIS) Project Scientist in the areas of: Instrument Development and Operation, Analysis of Experimental and Meterological Data Sets, Computer Modeling and Analysis, System Administration and Computer Operations, and Administrative Support.

## 2.0 References

A. USDOL Occupational Safety and Health Administration Standards, (29 CFR 1910 General Industry or 29 CFR 1926 Construction, as applicable);
B. Executive Order 11807;
C. National Fire Codes (NFPA);
D. Uniform Building Code (UBAC) of International Conference of Building Officials (ICBO);
E. Goddard Handbook (GHB/NASA Handbook (NHB) 1700.1 (VI-B) June 1993, Basic Safety Requirements;
F. NHB 1700.1 (VC), System Safety;
G. GHB/NHB 1700.1 (V10), Occupational Safety and Health Program;
H. Goddard Management Instruction (GMI) 1700.28, GSFC Health and Safety Program;
I. GMI 1710.2, Computer Safety;
J. GMI 1710.3, Trailer and Van Fire Protection and Safety;
K. GMI 1710.4, Design, Inspection, and Certification of Pressure Vessels and Pressurized Systems;
L. GMI 1152.7, Facilities, Health and Safety Committee;
M. GMI 6730.4, Vehicle and Pedestrian Traffic;
N. GHB 1040.1E, Emergency Preparedness Plans and Procedures (VI);
O. NSS/GO 1740.8, Certification of Personnel Engaged in Potentially Hazardous Operations;
P. Building Emergency Plan, Building 1, 14, 1 16 W, 21, 22 and 28. Copies of the above documents shall be maintained for references by the Project Manager and SSAI's Vice President;
Q. NMI - 8621.1E NASA Mishap Reporting and Investigation Manual; and
R. Any State, County and/or Local Safety Codes as applicable.

## 3.0 Responsibilities

### 3.1 Safety Officer

The Project Manager will be the SSAI on-site Safety Officer. The Safety Officer will represent SSAI in all matters pertaining to the safety program. The Safety Officer is responsible for the development, implementation and enforcement of all guidelines and procedures relating to SSAI's Safety Plan and has the authority necessary to implement all requirements. The Safety Officer's responsibilities include, but are not limited to:

A. developing and implementing a comprehensive fire prevention program;
B. developing and implementing emergency procedures for fire, medical assistance, bomb threats, water leakage, and natural disasters;
C. establishing and administering a facilities inspection program;
D. reviewing and evaluating long- and short-range accident prevention goals;
E. coordinating with the Project Managers to establish safety training requirements (CPR aides, fire extinguisher courses, first aid courses, etc.) and ensuring that an adequate number of personnel in each department are trained;
F. maintaining an accurate record of injuries, incidents and property damage for reporting accident experience as required by the GSFC Safety Officer. These records will include, as a minimum, the:
   1. number of lost-time accidents;
   2. number of days lost;
   3. number of man-hours not worked;

4□ principal types of incidents and accidents incurred; and

G□ the Safety Officer will also ensure that no SSAI personnel invalidate the integrity of safety systems without proper authorization□

### 3□2 SUPERVISORS/SECTION MANAGERS

The responsibilities of first-level supervisors will include:

A□ implementing safety awareness in day-to-day operations in assigned areas and enforcing procedures that ensure the safety of personnel, property, and equipment;

B□ ensuring compliance with safety procedures established for designated hazardous conditions, locations, or operations to include good housekeeping practices, safe storage and handling of materials, proper lighting and ventilation, and enforced wearing of protective clothing and equipment, if applicable;

C□ reporting any need of improvement of safety conditions in their areas to the Safety Officer;

D□ motivating employees to support the safety effort through personnel example and employee safety meetings;

E□ displaying of posters, signs, and exhibits relating to safety; and

F□ coordinating training requirements (CPR courses, fire-fighting, etc□) with the Safety Officer□

### 3□3 EMPLOYEES

Employee participation in the SSAI Safety Program is encouraged and expected□ Each employee is responsible for adhering to established safety procedures as well as reporting any hazard, potential safety problem, or unsafe activity to the supervisor or safety representative of the area where the unsafe situations or acts exist□ Each employee is responsible for:

A□ working in conformance with established safety practices;

B□ promptly reporting all safety violations or injuries to the supervisor; and

C□ being knowledgeable of all emergency procedures applicable to their work area□

## 4□0 Safety Procedures

### 4□1 FACILITY INSPECTIONS

#### 4□□ *SSAI Inspections*

Each Project Manager will personally conduct a quarterly safety inspection of all facilities under his cognizance□ During the survey, particular attention should be given to the following frequently cited items: housekeeping, storage of combustibles (excess), use and storage of flammable liquids, toxic materials, radioactive sources, electrical wiring of equipment, extension cords in use in lieu of permanent wiring, aisle width and tripping hazards, restrictions in corridors/exit ways, storage on top of cabinets and risk of falling objects, clearance below sprinkler heads (minimum 18 inches), availability and use of safety and personal protective equipment, cylinder use and storage, machinery and belt guards, condition of fume hoods, utilization of equipment, conservation of energy and utilities, posting of warning signs, long term storage of materials, etc□A list of inspection items is included in Appendix A□

Inspections will be recorded using standard GSFC Building Fire-Safety Survey Reports□ A copy of this form is included in Appendix B□Completion of implementation of corrective action for deficiencies shall be required within ten working days of the survey□ A summary of current deficiencies ("open-items") showing the action taken and a schedule for completion will be submitted to the Safety Officer monthly□

#### *4□□2 GSFC Inspections*

When SSAI facilities are inspected by the GSFC Health and Safety Engineering Office and/or the GSFC Facilities Operations Manager (FOM), the cognizant Supervisor/ Section Manager will provide the Safety Officer with a copy of the inspection report□The Supervisor/Section Manager will take corrective action to eliminate inspection deficiencies within five working days of receipt of the inspection report and provide a written report to the Safety Officer within ten working days□

### 4□2 FIRE PREVENTION PROCEDURES

#### *4□2□1 Safety Officer Responsibilities*

The Safety Officer will:

a□ assist and advise the appropriate managers or their designees on matters pertaining to the fire

prevention program;
b. conduct periodic fire prevention inspections of all facilities;
c. assure that an adequate number of fire extinguishers are installed and kept in working order and provide for training by designated safety representatives in the use of fire extinguishers;
d. coordinate relocation of any installed fire protection equipment with the cognizant GSFC FOM; and
e. coordinate and provide fire prevention training guidance.

### 4.2.2 Supervisory Responsibilities

Supervisors will:

a. assure that department personnel know how to report fires and practice fire prevention measures;
b. see that assigned premises are inspected at the close of business to detect and eliminate fire hazards;
c. assure that all personnel are familiar with the fire and evacuation route plan for the building; and
d. see that work areas under their supervision are maintained in a fire-safe manner and free from potential fire hazards.

### 4.2.3 Employee Responsibilities

All employees will:

a. be responsible for good housekeeping in their working area at all times; and
b. notify their supervisor of any condition in their working area, that left unchecked, could become a potential fire hazard.

## 4.3 FIRE EMERGENCY PROCEDURES

A. Any employee detecting an actual or suspected fire should:
   1. Pull the nearest fire alarm box if safety possible, or report fire emergency dial "112".
   2. If unable to reach the telephone operators, notify the Emergency Communications Console (ECC) monitor by dialing extension 5150.

**NOTE:** All employees should evacuate the building and close the doors if possible. Personnel should go to a safe place and wait for firefighters to arrive. Direct the firefighters to the fire.

B. When possible, employees should fight small fires to keep them under control. Use fire extinguishers on small fires.

**NOTE:** Do not risk your life to fight a fire. Follow the directions of the Supervisors/Section Managers.

C. When the fire alarm is sounded (bells), personnel should:
   1. secure the computer equipment;
   2. leave the area, taking any personal belongings nearby;
   3. proceed to the designated exit. Follow the instructions of the Supervisors/Section Managers;
   4. do not use elevators and avoid hazardous areas;
   5. secure all doors, if possible; and
   6. move to the staging areas at least 100 yards from the building.

## 4.4 EMERGENCY MEDICAL PROCEDURES

A. To report medical emergencies, dial the GSFC Emergency Operator on "112".
B. If you are unable to reach the Goddard Emergency Operator, call the Health Unit, Ext. 6666. If you are unable to reach the Health Unit, call the Prince George's County Fire Board for Medical Assistance on number "9-911".
C. State the nature of the emergency, location, name and phone extensions.
D. All SSAI employees are responsible for reporting medical emergencies.
E. Take the following actions after Medical Emergencies have been reported:
   1. notify your Supervisor/Section Manager of the actions you have taken during the emergency;
   2. anyone properly trained in American Red Cross First aid procedures should render first aid at the scene;
   3. the Supervisor/Section Manager should lead the medical personnel to the site of the emergency;
   4. the Supervisor/Section Manager should secure the area until arrival of a GSFC Safety and Environmental Branch investigator; and
   5. accident site shall remain secured until released by the Contracting Officer and the GSFC Safety and Environmental Branch.
F. First Aid Kits are available from the Supervisor/Section Manager for minor injuries. The Goddard

  

First Aid Station (Building 5) is available for any emergency.

G. Injuries occurring during the performance of your job should be reported to the Section Supervisor/ Section Manager.

### 4.5 BOMB THREAT EMERGENCY PROCEDURES

A. If a bomb threat is received, notify the Emergency Operator by dialing "112". Give the operator the following information:
   1. your name;
   2. the wording of the threat, if you can recall;
   3. the telephone number over which the threat was received; and
   4. any description of the caller's voice that you can provide.

**NOTE:** Personnel should proceed in an orderly manner to the assigned assembly point outside of the building. Goddard buses will provide transportation to and from the assembly point. **DO NOT USE PRIVATE AUTOS.** Any personnel receiving a bomb threat should fill out a Bomb Threat form (Appendix C) as soon as possible and forward the form to the Supervisor/Section Manager.

B. When building evacuation is ordered for a bomb threat, all personnel should:
   1. leave the building as quickly as possible, observing all evacuation guidelines;
   2. move away from the building (at least 100 yards);
   3. report to their Supervisor/Section Manager about equipment status or any unusual situations noted; and
   4. Supervisors/Section Manager should report the emergency to the NASA Representative on the scene and to the Safety Officer.

**NOTE:** The building should be evacuated 30 minutes before the threatened time of detonation and left empty until 30 minutes after this time. NASA Security Representatives will search the building and occupants will return only if nothing is found. The NASA Security Representative on site may request SSAI employees to participate in the search for the bomb. **Participation by SSAI employees is strictly voluntary.** All SSAI employees that are not in their work area during the emergency should evacuate by the nearest safe exit.

### 4.6 NATURAL DISASTER EMERGENCY PROCEDURES

A. SSAI personnel should report natural disasters that are impending or have occurred to the GSFC Emergency Operator, dial "112".
B. Avoid making other calls in order to leave the GSFC switchboard open.
C. Immediately follow the instructions by your Section Supervisor.
D. Give all possible aid and assistance to fellow workers. Do not endanger your own safety.

## 5.0 Training And Instruction

### 5.1 NEW EMPLOYEES

Supervisors/Section Managers, will, as part of new employee orientation, brief new employees on the following subjects:

A. SSAI Health and Safety Plan;
B. cognizant GSFC Division Safety Plan;
C. emergency procedures in the employees' area;
D. location of fire extinguishers and other emergency equipment in the employees' area; and
E. building evacuation plan.

### 5.2 GSFC HEALTH AND SAFETY ENGINEERING CERTIFICATION

Each Supervisor/Section Manager will, in coordination with the Safety Officer, maintain one person in the section that has a valid CPR certification through participation in the GSFC CPR training program. Additionally, the Supervisor/Section Manager will schedule at least two persons per year for the GSFC fire extinguisher and fire fighting course. Supervisors/section Managers will encourage participation in other GSFC Safety and First Aid training sessions.

Personnel engaged in potentially hazardous operations, such as work with high voltage or hazardous material, will be certified by the GSFC Safety Engineer in accordance with NSS/GO-1780.8, Certification of Personnel Engaged in Potentially Hazardous Operations.

### 5.3 SECTION TRAINING

At least once every six months, Supervisors/Section Managers will brief their entire section on the emergency

procedures (Section 4), and where practicable and in coordination with the cognizant GSFC officials, conduct a fire and evacuation drill.

## 6.0 Reporting Requirements

### 6.1 OSHA Requirements

SSAI will adhere to all record keeping requirements as provided for in the Occupational Safety and Health Act of 1970. OSHA forms 101 and 200 are required and will be retained at the contractor establishment for five years following the end of the year to which they relate.

A. OSHA 101 - SUPPLEMENTARY RECORD OF OCCUPATIONAL INJURIES AND ILLNESSES. Workers compensation "First Report of Injury" forms will be used as substitutes for OSHA 101. Forms will be completed and forwarded to the company's Workers Compensation carrier within six working days after receiving information that a recordable injury or illness has occurred.

B. OSHA 200 - LOG OF OCCUPATIONAL INJURIES AND ILLNESS. SSAI will maintain a record of all recordable occupational injuries and illnesses.

### 6.2 GSFC Requirements

The Safety Officer will submit a report to the GSFC Safety Engineer (Code 205) each month. Injury frequency rate and severity rate will be computed in accordance with National Safety Council Accident Facts Book. A copy of the report will also be provided to the Division Manager.

The SSAI Safety Officer will notify the GSFC Safety Engineer immediately after the Type A Accident, Type B Accident or Mission Failure. NASA definitions of Accidents and Incidents are listed below:

A. Type A Accident - A mishap causing death, disability injury to five or more persons, or damage to equipment or property exceeding $100,000. An investigation board is mandatory.

B. Type B Accident - A mishap disabling injury to four or fewer persons or damage to equipment or property exceeding $10,000 but under that of a Type A Accident. An investigation is mandatory. Whether an investigation board is used is optional and depends on the circumstances.

C. Incident - A mishap of less-than-accident severity to personnel or property; more specifically, where injury to personnel is judged to be sufficiently minor as to result in no time loss beyond the day of the mishap or where damage to equipment or property is construed to be less than $10,000 or greater than $250. A near-miss occurrence which could have resulted in an accident is also considered an incident.

D. Mission Failure - Any accident, incident, occurrence, event or anomaly of such a serious nature that it significantly delays or jeopardizes a mission, prevents accomplishment of a major primary mission objective, or results in a premature mission termination.

E. NASA Mishap - Any occurrence, event or anomaly that may be classed as a NASA accident, incident or mission failure.

## Appendix A - Facility Inspection

### Facility Inspection Items

(1) Aisles and Passway:
- (a) Where mechanical handling equipment is used, sufficient safe clearance shall be allowed for aisles at loading docks, through doorways, and whenever turns or passage must be made.
- (b) Aisles and passageways shall be kept clear and in good repair with no obstructions across or in aisles that could create hazards.

(2) Chains, Cables, Ropes, etc.
- (a) Chains, cables, ropes, signs, etc. shall be inspected daily, and defective gear shall be removed and repaired or replaced.
- (b) Hoist chains and hoist ropes shall be free from kinks or twists and shall not be wrapped around the load.

(3) Electrical
- (a) Power cords shall be connected directly into a receptacle (do not use extension cord).
- (b) Route power cords in a manner that will not create a tripping board.
- (c) Power cords that have been spliced or are frayed or cracked shall not be used.
- (d) All electrical equipment shall be marked to show the manufacturer's name, trademark, or other descriptive marking that identifies who is responsible for the product.
- (e) All fixed equipment shall be properly grounded.

  

(4) Emergency Flushing -- Eyes and Body
- (a) Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use□

(5) Exits
- (a) Every building designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of emergency□
- (b) In hazardous areas, or where employees may be endangered by the blocking of any single means of egress due to fire or smoke, there shall be at least two means of egress remote from each other□
- (c) Exits and the way of approach and travel from exits shall be maintained so that they are unobstructed and are accessible at all times□
- (d) All exits shall discharge directly to the street or other open space that gives safe access to a public way□
- (e) Exit doors serving more than 50 people, or at high hazard areas, shall swing in the direction of travel□
- (f) Exits shall be marked by readily visible, suitably illuminated exit signs□Exit signs shall be distinctive in color and provide contrast with surroundings□The word "EXIT" shall be of plainly legible letters, not less than six inches high□

(6) Eye and Face Protection
- (a) Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment□

(7) Fire Protection
- (a) Portable fire extinguishers suitable to the conditions and hazards involved shall be provided and maintained in an effective operating condition□
- (b) Portable fire extinguishers shall be conspicuously located and mounted where they will be easily accessible□Extinguisher shall not be obstructed or obscured from view□

(8) Floors, General Condition
- (a) All floor surfaces shall be kept clean, dry and free from protruding nails, splinters, loose boards, holes or projections□
- (b) Where wet processes are used, drainage shall be maintained, and false floors, platforms, a mat or other dry standing places should be provided where practicable□

(9) Floor Openings, Hatchways, Open Sides, etc□
- (a) Floor openings shall be guarded by a standard railing on all exposed sides, or be protected by a suitable cover□
- (b) Open-sided floors, platforms, etc□four feet or more above the adjacent floor or ground level shall be guarded by a standard railing on all open sides, except where there is an entrance to a ramp, stairway or fixed ladder□

(10) Foot Protection
- (a) Foot protection equipment shall be worn when there is reasonable probability that injury can be prevented by such equipment□

(11) Head Protection
- (a) Head protection equipment (helmets) shall be worn when there is a possible danger of head injuries from impact, flying or falling objects or electrical shock and burns□

(12) Hand Tools
- (a) SSAI shall be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees□
- (b) All hand tools shall be kept in safe condition□Handles of tools shall be kept tight in tool, and wooden handles shall be free of splinters or cracks□Wedges, chisels, etc□ shall be free of mushroomed heads□ Wrenches shall not be used when sprung to the point that slippage occurs□
- (c) The frames of portable electric tools and equipment, except when approved double insulated construction, shall be properly grounded□
- (d) Electric power tools and equipment showing worn, deteriorated, or inadequate insulation or other parts shall be removed from service and repaired or replaced□

(13) Housekeeping

(a) All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.

(14) Stairs, Fixed Industrial

(a) Every flight of stairs having four or more risers shall be provided with a standard railing on all open sides. Handrails shall be provided on at least one side of closed stairways, preferably on the right side descending.

(b) Stairs shall be constructed so that right height and tread width is uniform throughout.

(c) Fixed stairways shall have a minimum width of 22 inches.

(15) Stationary Electrical Devices

(a) All stationary electrically powered equipment, tools and devices, located within reach of a person who can make contact with any grounded surface or object, shall be grounded.

(16) Storage

(a) All storage shall be stacked, blocked, interlocked and limited in height so that it is secure against sliding or collapse.

(b) Storage areas shall be kept free from accumulation of materials that constitute hazards of pest harborage. Vegetation control will be exercised when necessary.

(c) Where mechanical handling equipment is used, sufficient safe clearance shall be allowed for aisles, at loading docks, through doorways, etc.

(17) Tripping Hazards

(a) During the inspection, be alert to the numerous tripping hazards that might exist within the computer laboratory and office areas. These would include such things as poorly placed electrical and telephone stacks, wires running across aisle areas, improperly stored equipment and materials, etc. Where hazards exist, appropriate action is to be taken to eliminate these conditions. The computer laboratory floor should be inspected for leveling, open holes, and missing tiles.

(18) Miscellaneous Hazards

(a) During the inspection of office, computer, and shop areas, particular emphasis should be placed on elimination of fire hazards. These include such items as excessive accumulation of papers on workbenches, desk tops, table tops, and heating and air conditioning window units. Also included in this category of hazards would be improper storage of combustible items. It is expected that major improvements will be made in all areas in the elimination of these hazards.

(b) When fire extinguishers are not available and fire hazards exist, assistance from the GSFC Health and Safety Engineering Office should be requested.

(19) Hazards from Falling Objects

(a) A number of employee injuries are caused by falling objects. In order to minimize the risk of such injuries, the tops of all storage cabinets should be cleared of any stored material. Shelving and cabinets should be checked to assure that no overloading conditions exist. Injuries of this sort will also occur when equipment is pulled from bench tops as a result of employees tripping over wires improperly laid across walk areas. A thorough examination of your computer areas is needed to spot potential hazards, particularly storage areas where paper, tapes, and other supplies are kept. Assistance can be provided to you by the GSFC Health and Safety Engineering Office.

(20) Seldom Used and/or Excess Furniture and Equipment

(a) Although property inventories provide for the elimination of many items or surplus equipment and furniture, you should still be alert to the continuing need to dispose of equipment prior to and after inventories. Whenever seldom used or excess furniture and equipment are found, necessary action should be taken to store these items or declare them surplus.

  

## Appendix B - Inspection Reports

### Inspection Reports

(EXAMPLE)

BUILDING 33 FIRE-SAFETY SURVEY REPORT

FIRE AND ACCIDENT PREVENTION FOR YOUR SAFETY

ROOM _____ COGNIZANT OCCUPANT_____ DATE _____

CODE _____ BRANCH/SECTION HEAD_____ SURVEY_____

RE-SURVEY_____ EXT□_____

TYPE OF OCCUPANCY:

OFFICE_____ LABORATORY_____ DATE FACILITY_____

---

A SURVEY OF THIS OCCUPANCY HAS BEEN MADE TO IDENTIFY CONDITIONS THAT MAY ADVERSELY AFFECT THE SAFETY OF PERSONNEL AND CONTINUITY OF OPERATIONS IN THE FACILITY AS A RESULT OF AN ACCIDENTAL OCCURRENCE□IN THE INTEREST OF SAFETY IT IS REQUESTED THAT THE ITEMS REFERENCED BELOW BE GIVEN YOUR IMMEDIATE ATTENTION□

ITEMS FOR CORRECTIVE ACTION:

_____( ) TRASH
_____( ) EXITS/CORRIDORS
_____( ) AISLES (INSIDE ROOMS)
_____( ) HOUSEKEEPING
_____( ) OTHER
_____( ) ELECTRICAL
_____( ) BUILDING STRUCTURE
_____( ) FLAMMABLE LIQUIDS
_____( ) FIRE/SAFETY EQUIPMENT
_____( ) PERSONAL PROTECTIVE EQUIPMENT

Corrective action listed below is referenced by number from the above corrective action checklist:

_____

_____

_____

_____

_____

If at any time questions regarding safety arise, do not hesitate to contact the Building FOM or the Health and Safety Engineering Office, Code 205□

_____ _____

Occupancy Representative FOM/Representative

---

**RESULT REPORT**

_____ HAZARD CORRECTED
_____ HAZARDS NOT CORRECTED
_____ CORRECTIVE ACTION INITIATED

**RESULT DISTRIBUTION**

_____ FOM NOTIFIED
_____ BRANCH HEAD/ DIVISION CHIEF NOTIFIED
_____ HEALTH AND SAFETY ENGINEERING OFFICE NOTIFIED

**NOTE:** DIVISION POLICY REQUIRES CORRECTIVE ACTION WITHIN TEN (10) WORKING DAYS OF SURVEY□ CORRECTIVE ACTION REQUIRED WITHIN FIVE (5) WORKING DAYS OF NOTIFICATION BY H&SEO OF FOM/REP□

## Appendix C - Bomb Threats

BOMB THREATS

**BOMB THREAT!** **DON'T PANIC!**

1□ Exact initial words of caller:

_____

_____

_____

2□ Specific questions: (Record answers exactly as spoken by caller):

a□ Where is the bomb?_____

b□ What time is the bomb set to go off?_____

c□ What kind of bomb is it?_____

d□ What does it look like?_____

e□ Who do you represent?_____

f□ Who are you?_____

g□ Why did you place the bomb?_____

h□ Did you know there are innocent people in the building who may be killed or injured?

_____

i□ Please repeat what you've told me to make sure I understand you:_____

3□ Exact closing words of caller:_____

4□ Time caller hung up:_____

5□ Description of callers voice:

a□ Familiar? Yes_____ No_____

b□ Male_____ Female_____

c□ Young_____ Middle Aged_____ Old_____

d□ Voice Pitch: High_____ Med_____ Deep_____

e□ Accent_____ Ethnic_____ Regional_____

f□ Impediment?_____ Describe

6□ Your name and position:_____

Your location and address_____ Building_____ Room_____

7□ Phone number on which call was received:_____

Date/time of call:_____

INSTRUCTIONS

Report all bomb threats IMMEDIATELY by dialing "112□"

## Attachment G: Surveillance Plan

*Our SSAI team's approach to SESDA surveillance includes automation and interactive methodologies to gather performance data that permits identification and correction of discrepancies to ensure high quality of SESDA services.*

### 1.0 Overview

The SESDA procurement is an award fee contract for performance based services in which each task has a definitive set of deliverables, schedules and performance metrics. The challenge for surveillance is to cost effectively provide an accurate and complete picture of schedule progress and quality of services. Accordingly, the planned surveillance capabilities must not only identify discrepancies but also plan and execute timely corrective actions to maintain high quality SESDA services (**Figure G-1**)

We offer a surveillance process that employs automated tools for efficient and effective processing of performance information for all SESDA tasks. These tools are accompanied by interactive methods to obtain in-depth qualitative assessments from ATRs and other GSFC personnel. The process includes opportunities for self-evaluation and provides input to the GSFC award fee process. Self–evaluation is performed for task related activities as a measure of internal performance to ensure that our team performs at maximum efficiency (**Figure G-2**)

The primary goal of our surveillance data gathering is to clearly identify deficiencies so we can devise appropriate solutions for their correction. Our team management reviews performance metrics summaries along with customer feedback, to ensure that we maintain the quality and timeliness of our products and services.

[redacted]

- Proven system to select meaningful deliverable metrics
- Proven automated system to collect and store data for thorough inspection
- Cost and schedule compliance included in key metrics
- Feedback process to obtain direct GSFC input to surveillance
- Focus on deficiency identification and correction to ensure consistently high quality services

S051

We use the Management Integrated Process Team (IPT) tool to devise solutions to surveillance and performance improvement issues that cut across organizational boundaries. The Management IPT then makes recommendations to the Program Manager (PM) for approval.

### 2.0 Level, Frequency, and Method of Internal Surveillance

Our surveillance activities are performed at the task level. Our task implementation process includes the definition of deliverables for all tasks within the SOW functional areas (**Figure G-3**). SESDA task deliverables cover a wide

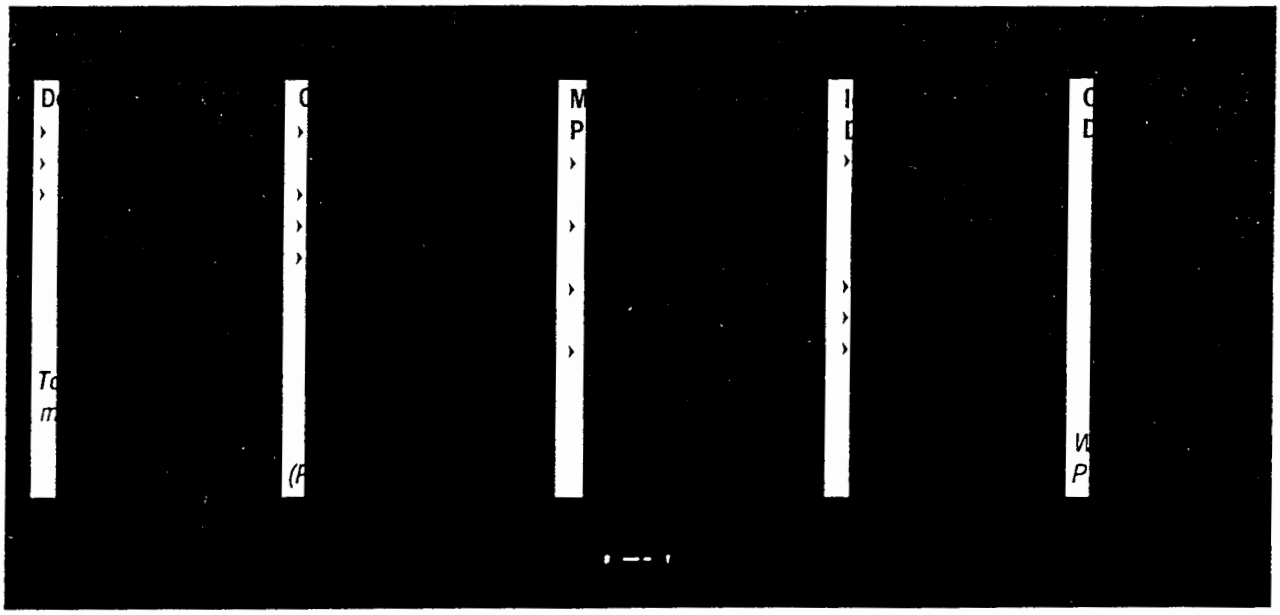

***Figure G-1 - SSAI Team Surveillance Overview**: The primary goal of our Surveillance Plan is to maximize quality and timeliness of SESDA performance*

  

| Features | Benefits |
|---|---|
| Modular process designed for individual task adaptability | Provides flexibile use for all SESDA tasks |
| Proven automated surveillance tool | Allows 100% inspection using task metrics |
| Customer feedback through user surveys and meetings with GSFC personnel | GSFC participation in performance assesment and improvement actions |
| Pro-active monitoring using automated report summaries and continuous interaction with GSFC | Early deficiency indentification and rapid corrective action |
| Management and GSFC focus on issues resolution through Management IPT | Surveillance activity continues in parallel with positive actions for improvement |

S052

***Figure G-2 - Features and Benefits of the SSAI team Surveillance Plan:*** *Our Surveillance Plan ensures a consistent level of high quality support on the SESDA contract as its ultimate benefit to the customer*

range of different types that can be categorized as:

- Quantitative for such deliverables as daily, weekly and monthly status reports
- Analytical for such deliverables as data analysis results or algorithm software
- Qualitative for deliverables such as computer network support service
- Combinations of the above such as for deliverables that might include a status report associated with algorithm software (quantitative plus analytical ) or a maintenance report along with computer maintenance services (quantitative plus qualitative)

Accordingly these different types of deliverables require appropriate metrics for performance evaluation (**Figure G-4**)□Additional task performance elements include schedule and cost and associated metrics□With 170 tasks and multiple deliverables/task, tracking this information is very difficult without an automated process□We use a relational database based tool called the Performance Tracking System (PTS) that provides detailed information on the quality and timeliness of SESDA deliverables□

Our PTS is based on a successful legacy system that is an integral part of SSAI's surveillance of our performance based services contract with the GSFC Laboratory for Terrestrial Physics (LTP)□All objective measures used to monitor SESDA performance are stored on a task by task basis□This includes the task metrics and results and feedback survey form ratings□

We track task expenditures as part of the surveillance plan□During the task initiation process we develop a task financial plan and the total task cost is provided to the PTS from SSAI's DCCA-approved DELTEK accounting software□The SSAI accounting system provides the PTS with monthly updates on actual expenditures for each task□ Using the PTS, managers can obtain information on the current task expenditures versus that projected at task initiation□

The PTS is a tool for both SESDA managers and GSFC ATR personnel to easily monitor task performance on 100 percent of the SESDA tasks□The PTS provides a Graphical User Interface (GUI) front end securely accessible through the Internet□Thus SESDA managers and GSFC ATRs can make ad hoc queries to access information about SSAI team performance on their respective task(s)□This information includes performance levels, cost and schedule compliance, and the type and due dates of future deliverables□

The PTS provides similar information through regularly scheduled, standardized reports (e□g□,monthly, quarterly)□ Our team managers receive monthly reports for their respective tasks that provide a full accounting of deliverable quality and schedule compliance□The PTS also provides a report detailing items that are due the following month□This timely information about past performance and future deliverable requirements focuses each manager's attention on existing and potential performance issues which leads to positive and timely corrective actions□

Each month, our Group Managers (GM) and Department Managers (DM) inspect the performance elements of each task (**Figure G-5**)□Unlike unique deliverables (e□g□, scientific algorithms, design documents) that lend themselves to complete inspection, the large volume of recurring reports (e□g□ daily data production reports, monthly technical reports) usually requires a sampling process for inspection□

For completed deliverables, we prepare a deliverable evaluation form that includes our self-evaluation of the deliverable (**Figure G-6**)□The technical performance level (target, high, low) for each performance indicator associated with the completed deliverable is entered into the PTS□We then ask the cognizant ATR to validate our evaluation result with comments if there is significant disagreement with our self-evaluation□In the rare case if there is disagreement, we meet with the ATR to learn "why the

| SOW Functional Area | | Typical Task Deliverables |
|---|---|---|
| 1 | Scientific data processing | ➤ Presentation-ready graphics, analysis, and documents<br>➤ Processing algorithms, algorithm software, test data, and user documentation |
| 2 | Modeling and data analysis | ➤ Models, analysis algorithms, analysis software, and analyzed data products<br>➤ Publication-ready graphics, analysis, and documentation |
| 3 | Information extraction support | ➤ Analysis algorithms, analysis software, documentation and analyzed data products<br>➤ Publication-ready graphics, analysis, and documentation |
| 4 | Multi-Mission data Archival and analysis | ➤ Data statistics (ingest /distribution volumes, distribution media used, catalogs generated)<br>➤ User statistics (number/types of users, web access rate, and user survey statistics)<br>➤ User tools and documentation<br>➤ Data documentation and user training documentation |
| 5 | Computer systems management | ➤ Computer performance reports<br>➤ Service level report (frequencies of reported problems and user complaints, average response time & turnaround time for user requests, and user satisfaction ) |
| 6 | Mission feasibility planning | ➤ Reports: mission activity schedules and mission integration<br>➤ Technical analysis for missions, presentation papers, and document updates |
| 7 | System development/ system engineering | ➤ Data Management Plan<br>➤ System development plans and requirement documents generated<br>➤ System design and reviews, hardware sizing, and system validation documents<br>➤ Interface control documents completed |
| 8 | Application SW development and use | ➤ Image analysis algorithms, SW design, coding, testing, and documentation<br>➤ SW sustaining, SW enhancements delivered and documentation<br>➤ Science data visualization SW development modules delivered |
| 9 | Database creation and data archiving | ➤ Data statistics (ingest /distribution volumes, distribution media used,catalogs generated)<br>➤ User statistics (number/types of users, web access rate, and user survey statistics)<br>➤ User access tools |
| 10 | Production processing | ➤ Product generation, maintain data libraries, and production logs<br>➤ Processed data products including product evaluations<br>➤ Graphical display creation and operation tools developed |
| 11 | Telecommunication | ➤ Advanced Network planning, implementation, and testing<br>➤ Service level report (frequencies of reported problems and user complaints, average response time & turnaround time for user requests, and user satisfaction) |
| 12 | Ground support | ➤ Real-time SW for telemetry acquisition and display and instrument commanding SW<br>➤ SW systems and applications support for field campaign support |
| 13 | User support | ➤ Establish and schedule training classes and seminars<br>➤ Set-up visiting science programs, field campaigns, and mission support |
| 14 | Engineering support | ➤ Documents such as design, drawings, and analysis reports for spacecraft instruments<br>➤ Engineering design products, field testing, and test results |
| 15 | Education outreach | ➤ Websites, meeting exhibits, newsletters, multimedia products, and class curricula<br>➤ User statistics (number of users reached, web access, number of media products shipped) |

S062

*Figure G-3 - **Typical Deliverables vs SOW Functional Areas:** Our team uses task deliverables and associated metrics to develop effective task SOWs*

  

| Performance Indicators | Technical Performance Level | | |
|---|---|---|---|
| | *Target* | *High* | *Low* |
| *Quantity* | Provide required quantity | Exceed required quantity | Provide quantity less than required |
| *Capability* | Provide required capability | Provide additional value-added capability | Provide capability less than required |
| *Availability* | Provide required availability | Provide availability in excess of that required | Provide availability less than required |
| | | | |
| *Completeness* | Well integrated; detailed and substantiated results; meets all requirements | Significant additional beneficial features, content or detail | Provide fewer features than required |
| *Correctness* | Error-free and accurate in all required areas | Error-free and accurate beyond specified requirements | Error content greater than contracturally required |
| *Usability* | Fully usable for intended environment, application and user | Value-added ease of use or range of users beyond those specified | Base of use less than specified |
| | | | |
| *Innovativeness* | Useful new ideas or approaches in areas where some known challenges exist | Insightful new idea or approach beyond expectations or in areas where challenges were unanticipated | Ideas or approaches uninspired with limited benefits or spin-offs |
| *Effectiveness* | Results focused on user needs, enable opportunities, scientificially or programmatically significant | Results exceed user expectations with clear benefits in application | Results do not meet reasonable goal expectations |
| *Feasibility* | Achieve all required results within known and acceptable risk environment | Results exceed the required degree of confidence | Results are below required degree of confidence |

S095

***Figure G-4 - Technical Performance Indicators vs Levels:*** *Our performance indicators allow a meaningful measure of deliverable quality*

disagreement" and use that information as a "lessons learned" tool to improve our product and our performance. If the "lessons learned" is widely applicable (e.g., using existing tools/techniques/codes/new technology), then we disseminate this information via our team information web site. In addition, we send an e-mail broadcast informing all appropriate personnel of the existence of a new performance improvement news feature.

The PTS provides standard monthly summary reports on deliverable performance level for each performance indicator associated with a completed deliverable. The system also produces summaries of the degree of schedule adherence for all completed deliverables and cost variance by task. The PTS alerts SESDA managers to future task deliverables via a report on the next month's schedule (**Figure G-7**). This provides a quick snapshot of all tasks for each GM and DM and a fast method of

| Performance Element | Type | Method | Quality Survey |
|---|---|---|---|
| Completed Deliverable | Unique | 100% Inspection | Yes |
| Completed Deliverable | Recurring | Random Sample | Yes |
| Interim Deliverable | All | Random Sample | No |
| Schedule Compliance | N/A | 100% Inspection | N/A |
| Cost Compliance | N/A | 100% Inspection | N/A |

S157

***Figure G-5 - Performance Element Surveillance Matrix:*** *Our surveillance approach includes proactive deliverable inspections to ensure consistent high quality*

spotting trouble areas□On request, the PTS system produces similar information by task□

Although the PTS provides standardized monthly reports, our managers are continually monitoring task progress through interaction with ATRs and task personnel□Also, we do not wait for deliverable completion to check deliverable quality□Each month, a deliverable in progress is chosen from randomly selected tasks□ Deliverables include hardware, software and documents□ For hardware, we review interim test results□For software we review test results or perform a code review□For document deliverables we review draft versions of the document□

We check schedule status as well as deliverable content□ Deliverables with insufficient progress or unacceptable quality are flagged for frequent and detailed monitoring□ Most deliverables (except hardware) and associated test results can be viewed through our tool "View work-in-progress"□The "View work-in-progress" module provides

**SESDA DELIVERABLE EVALUATION**

Task: _____ Author: _____

Deliverable Name: _____

Description: _____

Date Due: _____ Date Delivered: _____

**TECHNICAL PERFORMANCE INDICATORS**

Primary: (Level and Description)

_____

_____

_____

Secondary: (Level and Description)

_____

_____

_____

SESDA Manager: _____

ATR: _____

☐ Agree

☐ Disagree
(Please comment below or on separate sheet)

Comments: _____

_____

_____

Signature: _____

S152

***Figure G-6 - PTS Deliverable Report:*** *Our PTS reports provide managers with relevant up-to-date information to facilitate full compliance with SESDA requirements*

an established series of directories for each task□SESDA task personnel store copies of task documentation (e□g□ reports, data, analysis, code) in appropriate monthly subdirectories□Our managers and GSFC ATRs can open and review the contents of these directories to monitor deliver-

DATE: March 16, 2000 DELIVERABLES DUE - MANAGER: Dr. Brij Gambhir

| Task no | Deliverable name | Date Due | Date submitted |
|---|---|---|---|
| 00-922-C09 | E-mail report on enhancements and bug fixes | Apr 30 2000 12:00AM | December 1, 1999 |
| 00-922-C09 | Production status report | Apr 7 2000 12:00AM | December 1, 1999 |
| 00-922-C09 | Production status report | Apr 14 2000 12:00AM | December 1, 1999 |
| 00-922-C09 | Production status report | Apr 21 2000 12:00AM | December 1, 1999 |
| 00-922-C09 | Production status report | Apr 28 2000 12:00AM | December 1, 1999 |
| 00-922-C09 | Software documentation update | Apr 30 2000 12:00AM | December 1, 1999 |

S138

***Figure G-7 - PTS Deliverable Due Report:*** *Our PTS report provides managers with relevant up-to-date task information to facilitate full compliance with SESDA requirements (Output reproduced from our LTP contract)*

  

able quality and progress. This module, along with a task initiation module and the PTS comprise the Task Management System (TMS) (**Figure G-8**). The TMS expedites formulation and tracking of performance metrics and identification of deficiencies.

## 3.0 Capturing Key Performance Metrics

The SESDA key performance metrics are the performance indicators for each deliverable, due dates for these deliverables and total cost for each task. The first two performance metrics define the quality and timeliness of the SSAI team's services.

The capture of these key metrics involves two distinct steps. The first step involves recording in the PTS the planning information at the time an individual task is initiated (**Figure G-9**). At this time we specify performance indicators for each deliverable. These performance indicators then identify the standards for low, target and high performance levels (Section A.2). We also establish due dates (schedule) for each deliverable. Task resource expenditure information is entered in the DELTEK accounting system to obtain an estimate of total task cost.

The second step involves updating the PTS database to record performance measurements. Through the PTS web based GUI interface, SESDA personnel can enter information at the time of deliverable completion. This includes the dates delivered (degree of schedule compliance) and the performance level for each performance indicator associated with the deliverable. We obtain ATR validation through our self-evaluation survey (Section A.2). The PTS includes a "yes/no" flag to indicate the survey results.

Each month, our DELTEK accounting software produces cost update information for each task which we use to produce financial reports for GSFC. At the same time the DELTEK system provides electronic input to the PTS to record the task cost for the previous month and update the total cost to date. This is the basis for monitoring cost compliance.

## 4.0 Methods of Identifying and Correcting Deficiencies

Our process for identifying and correcting deficiencies involves establishing standards and monitoring performance (**Figure G-10**). As deficiencies are identi-

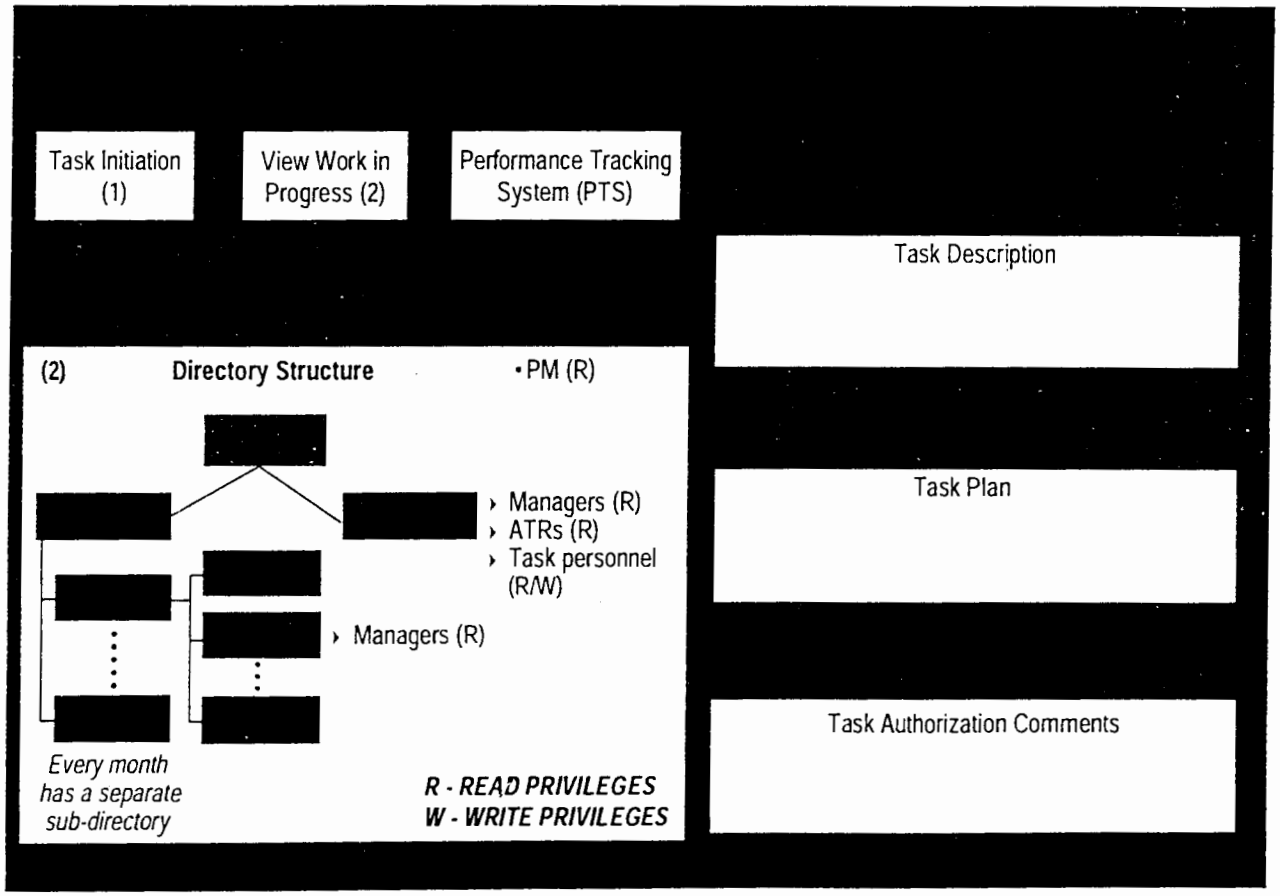


*Figure G-8 - TMS Overview: Our TMS provides an efficient system to quickly initiate tasks and monitor task performance*

  

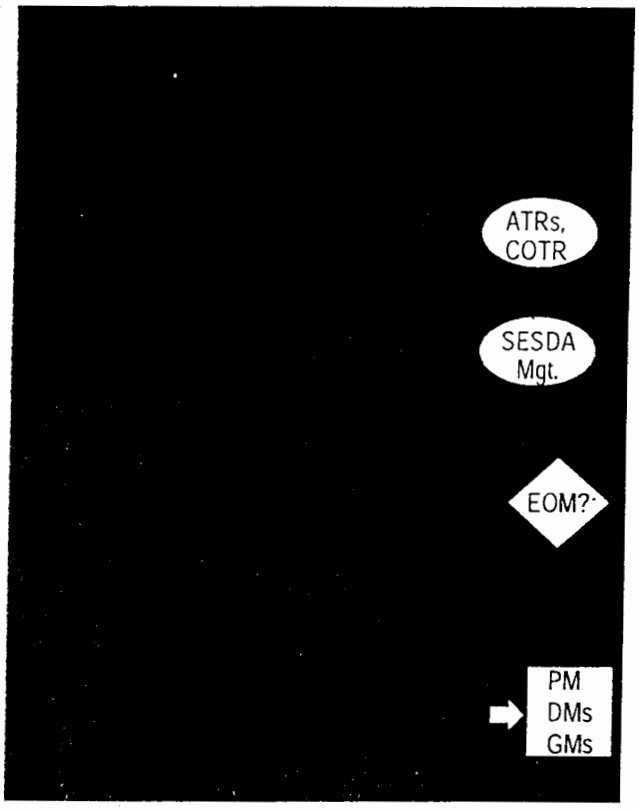


*Figure G-9 - PTS Dataflow:* The PTS system ingests and stores key performance metrics for further analysis

fied, solutions are developed and implemented and the "corrective activity" monitored to ensure that the deficiency is resolved. As part of our surveillance activities we establish standards for quality, timeliness of deliverables, and budgetary limits. This involves definition of the key performance metrics (deliverable performance indicator, due dates for these deliverables and total cost for each task) and updating the performance database to record performance measurements (Section A.3).

This process is currently being used on SSAI's PBC contract NAS5-99085, the LTP contract.

Performance monitoring involves not only an analysis of summary report information produced as standardized reports by the PTS, but a check of the work in progress to identify and correct problems before the deliverables are finalized. In addition, the SSAI team gathers feedback information from GSFC in the form of self-evaluation deliverable information surveys and semi-annual performance surveys (Section A.5). SSAI team personnel, including our respective corporate principals, keep in close contact with ATRs and other GSFC personnel via telephone and informal visits. During these contacts, the ATRs provide information on their satisfaction with our services or specific complaints about problems. We use all this information to monitor or improve the quality of our services.

Our SESDA managers receive standard monthly reports from the PTS that are designed to be analyzed quickly and provide a high level summary of the key metrics for each task. For example, the Monthly Task Cost Summary quickly shows the task costing status of each task under a Department or Group (**Figure G-11**). The monthly cost summary includes specific cost information for all tasks that show red (actual costs ±10 percent of estimated costs – spending too little may be as significant a deficiency as spending too much because it may imply staffing problems and result in uncosted carryovers). Management personnel can then access accounting information to learn more details. The PTS makes similar summaries available for the other key metrics to assist the managers in identifying problem areas. Note that our cost reporting thresholds can be readily adjusted as required.

Once we identify a problem we immediately take steps to provide a solution. For example, if we identify a task where deliverables are constantly late, the responsible manager investigates areas such as staffing level, skill level, or understanding requirements. The investigation

*Figure G-10 - Process for Identifying and Correcting Deficiencies: Our team surveillance plan includes measurable performance standards and automated tools and processes to identify performance deficiencies and appropriate corrective actions.*

  

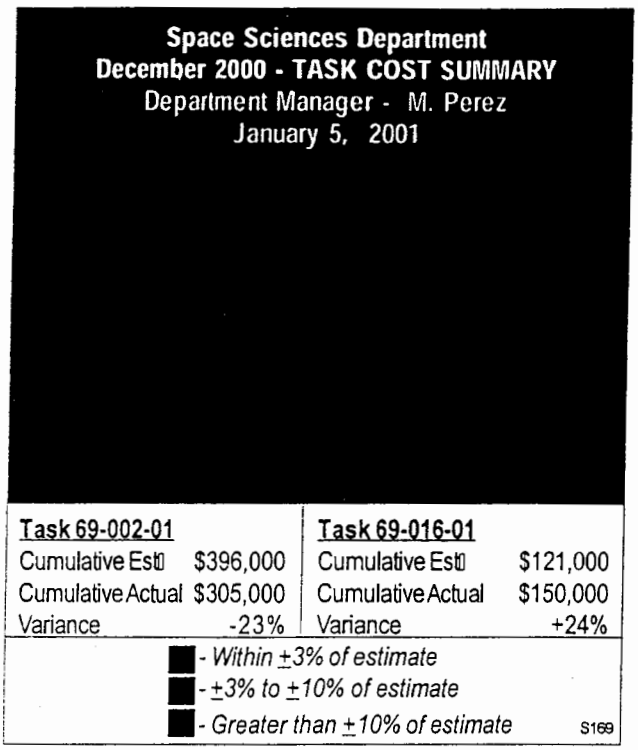


***Figure G-11 - Task Cost Summary:*** *Our automated reports provide a rapid assessment of key performance metrics*

involves discussions with GSFC personnel as well as task personnel. Solutions may involve adjusting the staff level (temporarily or permanent), providing automated tools to increase efficiency providing temporary help with additional skills, or training.

After a solution(s) is implemented we monitor the task more frequently than monthly to ascertain effectiveness of the solution. Together with task personnel we develop schedules with interim milestones and review the deliverables at these milestones. We use the "View-Work-In-Progress" module of the TMS to look at interim versions of the deliverables. At the same time, we closely monitor cost and deliverable quality indicators to make sure we are not sacrificing quality or cost efficiency for speed. We continue this closer monitoring until the task leader/manager as well as the ATR are satisfied that the work is back on track. We then return to the standard monitoring procedure.

## 5.0 Customer Surveys

Whereas PTS data provides an objective assessment of the SSAI team performance, we also rely heavily on subjective feedback to assess our performance and identify areas where improvement is needed. We take a proactive approach to obtaining this feedback through a semiannual feedback survey process, in addition to deliverable evaluation.

### 5.1 Survey Process

The central focus of the user feedback survey process is the SSAI team Feedback Survey Form (**Figure G-12**) This form is based on a similar form used for customer feedback on the SSAI LTP support contract. The ratings categories included in the feedback form are identical to those used on NASA Form 1680 and the descriptions are identical to those given in NFS 1816.405-275. The purpose for this is to facilitate use of this response information by GSFC in their award fee evaluation process (Section A.5.2). We have conducted two cycles of our LTP contract feedback process that have led to productive refinements in our survey form and in the survey process. During the latest cycle we received valuable feedback that allowed us to identify and correct a significant performance problem on one task.

As part of the SESDA feedback survey process, we follow-up initial survey distribution by personal contact with the ATRs to encourage their cooperation in completing the form. This is relatively straightforward since SSAI and our team members are all local corporate entities whose major focus is the GSFC SESDA contract. All user survey results are stored in our PTS for evaluation and analysis.

### 5.2 Facilitating Government Evaluation

We use the user survey results and their relationship to the NASA award fee ratings to conduct SSAI team performance self-evaluations. The survey ratings are related to the NASA Award Fee Rating (NFS 1816.405-275) so that we can include this information as part of our self-evaluation process.

For the GSFC Award Fee process, we collect summary information from the PTS for task performance, internal performance and cost performance. We then provide a statistical summary of the quantitative performance metrics along with a summary report that clarifies any inconsistencies in the statistical summaries. We also provide a summary of outstanding performance and explanations for poor/unsatisfactory performance along with a discussion of corrective actions.

## 6.0 Security and Information Technology Resources

In recognition of growing and significant IT security threats, we implement a comprehensive security plan for the computer and network systems used to support SESDA contract operations. Our security plan and procedures is compliant to NASA procedures and guidelines (NPG) 2810.1, "Information Technology Security." The plan documents the scope of system components and procedures, and identifies risks and responsible staff security personnel. Key elements of our security plan include: physical access restrictions, data encryption, authentication of us-

***Science Systems and Applications, Inc. (SSAI)*** ***Performance Evaluation***

***Assigned Technical Representative (ATR) Name:*** ***Contract Number:*** ***Task Number:***

***Task Title:*** ***Evaluation Period:***

Please rate the Contractor as "excellent", "very good", "good", "fair", "poor" in the following areas. Please give a short narrative as to why you chose the adjective you did.

***Excellent*** - Exceeds the established performance requirements to an exceptional degree.
***Very Good*** - Exceeds the established performance requirements to a substantial degree.
***Good*** - Meets the established performance requirements.
***Fair*** - Does not fully meet the established performance requirements.
***Poor*** - Fails to meet the established performance requirements.
***Not Applicable (N/A)***

***A. Technical Performance***

| | | *Excellent* | *Very Good* | *Good* | *Fair* | *Poor* | *N/A* |
|---|---|---|---|---|---|---|---|
| 1. | Overall quality of services and support provided. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. | Response to changing priorities. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. | Initiative in identifying and resolving unforeseen technical problems. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. | Relevant experience and background of assigned staff. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

***B. Schedule Performance***

| | | *Excellent* | *Very Good* | *Good* | *Fair* | *Poor* | *N/A* |
|---|---|---|---|---|---|---|---|
| 1. | Initiative in identifying unforeseen schedule problems. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. | Ability to evaluate impact of schedule delays on remainder of schedule. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

***For additional comments, please use the back of this page.***

***Assigned Technical Representative (ATR) Signature:*** ***Date:***

S137

***Figure G-12 - SESDA Performance Survey Form:*** *Our survey form is designed for ATR ease of use in providing valuable performance feedback assessments*

  

ers and hosts, routine security audits for user access and system file changes, system maintenance (patches applied upon release), backup and recovery procedures. We are investigating the use of public key infrastructure (PKI) software to prevent unauthorized users from reading transmitted data. PKI uses encryption to protect data. It uses public keys to lock the data, and private keys to unlock the data. The security plan is reviewed and updated on a semi-annual basis.

## 7. Managing the Surveillance Effort

The PM is ultimately responsible for providing quality services to GSFC. However the SSAI team approach to surveillance provides the PM a significant amount of help in this effort. Each manager and task leader is responsible for monitoring deliverable quality and timeliness as well as identifying and correcting deficiencies (**Figure G-13**)

Our surveillance activities are enhanced by the use of the Management IPT. Often surveillance issues arise that cut across organizational boundaries and require a forum that promotes a free exchange of diverse opinions and ideas. The Management IPT also includes GSFC participation because ultimately the recommendations of the Management IPT, if accepted by the PM, affect how we support the GSFC customer.

The DPM leads the Management IPT and is responsible for ensuring that recommendations to resolve quality and surveillance issues are forwarded to the PM for approval.

Although managers and task leaders interact with the PTS for performance summaries and ad hoc queries, most data entry and system administration support are provided by the SESDA Contract administration staff. The PTS is designed to set default values wherever possible, thus managers and task leaders need only update performance metrics by exception.

## 8. Conclusion

Our surveillance planning and operations are geared to ensure GSFC high quality and timely SESDA performance based services. We develop meaningful metrics for all our task deliverables and use tools to measure progress against the standards established at task initiation.

Our data collection process allows us to summarize and quickly analyze the metrics data to identify deficiencies. We also interface with ATRs frequently to learn of problems associated with customer satisfaction. Once a deficiency is identified, we act quickly to correct it, We then continue to monitor the deficiency area until we are sure the problem is permanently corrected.

Our Surveillance Plan includes secure data exchange and a formal feedback system to obtain qualitative assessment from our ATRs. The system further permits a direct relation with the NASA award fee ratings to aid GSFC in their award fee evaluation process.

Our Surveillance Plan is a living document. From time to time we modify the plan to adopt new methodologies or technology to maintain our ability to provide consistently high quality and timely SESDA service and products to our most important customer – GSFC.

| Manager | Surveillance Responsibilities |
|---|---|
| PM | ➤ Contract wide surveillance<br>➤ Prepare semi-annual self-evaluation input to GSFC<br>➤ Approve and monitor progress on improvement initiatives recommended by the Management IPT<br>➤ Leads semi-annual feedback survey process |
| DPM | ➤ Leads the Management IPT<br>➤ Assists PM with all surveillance responsibilities |
| DMs & GMs | ➤ Department/Group wide surveillance<br>➤ Prepare performance metrics as part of task initiation process<br>➤ Review monthly summary reports from PTS<br>➤ Prepare and review deliverable self evaluation forms - meet with ATRs when there is disagreement<br>➤ Initiate corrective actions in response to identified deficiencies<br>➤ Provide input to semi-annual self-evaluation process |
| Task Leaders | ➤ Task surveillance<br>➤ Assist in preparation of performance metrics as part of task initiation process<br>➤ Prepare and review deliverable self evaluation forms - meet with ATRs as appropriate<br>➤ Initiate corrective actions in response to identified deficiencies |

S170

***Figure G-13 - Management of Surveillance Responsibilities:*** *Our managers have specific surveillance responsibilities to ensure SESDA performance meets or exceeds GSFC expectations*